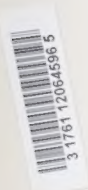


CAT
AP
-75AS1
Folio



CANADIAN ARCTIC GAS PIPELINE LIMITED



AMENDMENTS TO
ALIGNMENT SHEETS

SECTION 8 a 3

(PIPELINE ROUTING IN THE VICINITY OF FORT SIMPSON)

AND

DESIGN DRAWINGS

SECTION 8 b 3

(FOR CERTAIN MAJOR RIVER CROSSINGS)



Digitized by the Internet Archive
in 2025 with funding from
University of Toronto

<https://archive.org/details/31761120645965>

AMENDMENTS TO ALIGNMENT SHEETS AND DESIGN DRAWINGS

NOTES

ALIGNMENT SHEETS (Vicinity of Fort Simpson)

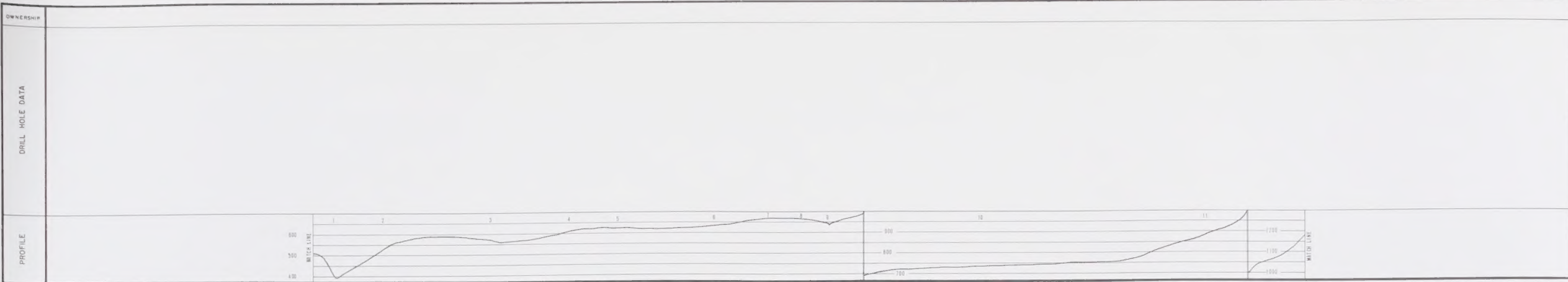
Alignment sheets bound in this volume replace certain Alignment sheets bound in two alignment sheet volumes (pipeline route in Canada, North of 60° latitude and South of 60° latitude) filed by applicant on March 31, 1974. The sheets in this volume show an amended alignment of applicant's proposed main line in the vicinity of Fort Simpson, N.W.T.

For a description of the alignment sheets, accuracy of scale, alignment sheet data, drill hole and terrain mapping data and a master index map, see the two volumes described above which were filed by applicant on March 21, 1974.

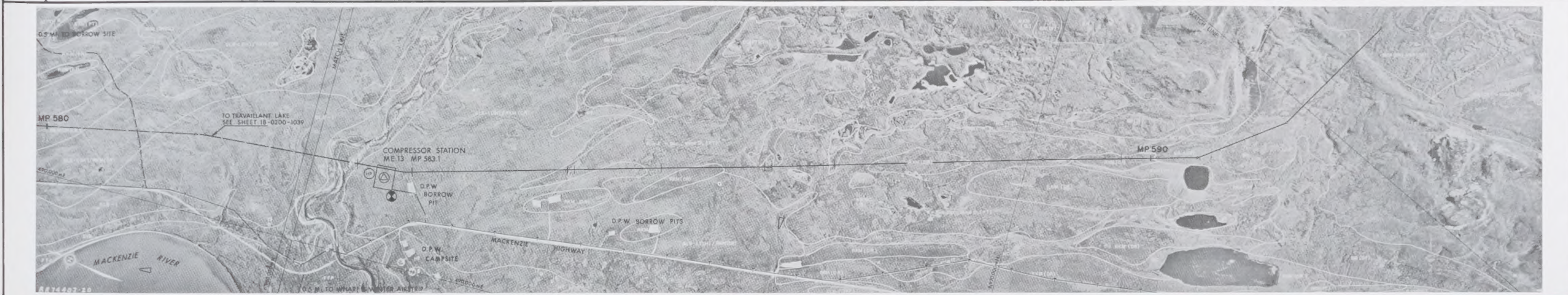
DESIGN DRAWINGS (For Certain Major River Crossings)

Design drawings, for certain major river crossings, which are bound in this volume, replace certain river crossing drawings which are bound in the volume entitled "Design Drawings and Flow Diagrams" filed by applicant on March 21, 1974. The drawings filed in March, 1974 and the amended drawings are numbered:

<u>Design Filed March, 1974</u>	<u>Amended Design</u>
Peel River — Sheet H-2 1E-0209-1001, 1E-0210-1001	1E-0232-1001
Mackenzie (Pt. Sep.) H-3 1E-0209-1003, 1E-0210-1003	1E-0232-1003
Mackenzie (Swim. Pt.) H-4 1A-0209-1001, 1A-0210-1001	1A-0232-1001
Mackenzie (Burnt. Is.) H-6 1B-0209-1017, 1B-0210-1017	Mackenzie (Ft. Simpson) 1B-0232-1044
Liard River — Sheet H-7 1B-0209-1018, 1B-0210-1018	Not Required



DRILL HOLE DATA (LEGEND)	
1. HOLE NO.	2. HOLE DEPTH (M)
3. HOLE TYPE	4. HOLE STATUS
5. HOLE LOCATION	6. HOLE COORDINATES
7. HOLE DIRECTION	8. HOLE DIAMETER
9. HOLE LENGTH	10. HOLE WIDTH
11. HOLE AREA	12. HOLE VOLUME
13. HOLE WEIGHT	14. HOLE PRESSURE
15. HOLE TEMPERATURE	16. HOLE HUMIDITY
17. HOLE SPEED	18. HOLE ACCELERATION
19. HOLE VIBRATION	20. HOLE NOISE
21. HOLE LIGHT	22. HOLE SOUND
23. HOLE TASTE	24. HOLE SMELL
25. HOLE TOUCH	26. HOLE FEEL
27. HOLE TASTE	28. HOLE SMELL
29. HOLE TOUCH	30. HOLE FEEL

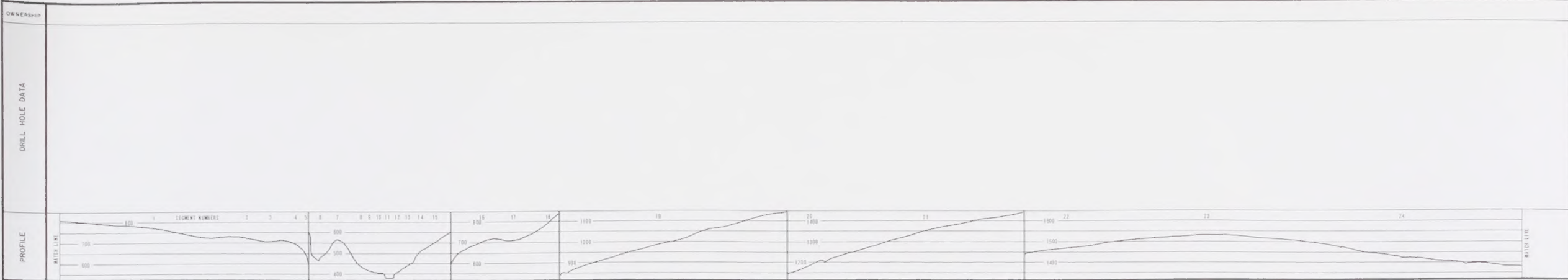


TERRAIN TYPING LEGEND	
1. TERRAIN TYPE	2. TERRAIN DESCRIPTION
3. TERRAIN CODE	4. TERRAIN COLOR
5. TERRAIN SHADE	6. TERRAIN PATTERN
7. TERRAIN TEXTURE	8. TERRAIN TOPOGRAPHY
9. TERRAIN VEGETATION	10. TERRAIN CLIMATE
11. TERRAIN SOIL	12. TERRAIN WATER
13. TERRAIN AIR	14. TERRAIN LIGHT
15. TERRAIN SOUND	16. TERRAIN TASTE
17. TERRAIN SMELL	18. TERRAIN TOUCH
19. TERRAIN FEEL	20. TERRAIN TASTE
21. TERRAIN SMELL	22. TERRAIN TOUCH
23. TERRAIN FEEL	24. TERRAIN TASTE
25. TERRAIN SMELL	26. TERRAIN TOUCH
27. TERRAIN FEEL	28. TERRAIN TASTE
29. TERRAIN SMELL	30. TERRAIN TOUCH

ENVIRONMENTAL DATA AND PROTECTION MEASURES	
WATER	River Between Two Mountains. Crayfish, humpback whitefish, round whitefish, lake trout, pink, longnose sucker, slimy sculpin. Important spawning areas upstream. Rearing area for longnose sucker in vicinity of crossing. Some winter flow - possible overwintering area. Sensitive all year round.
BIRDS	Mackenzie R. and islands used by waterfowl and shorebirds during migration in May and September.
MAMMALS	River Between Two Mountains used by moose during winter and spring movements.
VEGETATION	Good moose habitat.
LAND USE	Jack pine, black spruce, trembling aspen. Black spruce, Labrador tea, moss in drainageways. Scattered black spruce/Labrador tea/lichen on peat deposits.
OTHERS	Lakes used by waterfowl and shorebirds for breeding, molting and migration May to September.
Moderately productive upland turbeater habitat, moose and beaver around lakes	



[illegible]



TERRAIN TYPING LEGEND

1. 1:1 Scale

2. 1:1 Scale

3. 1:1 Scale

4. 1:1 Scale

5. 1:1 Scale

6. 1:1 Scale

7. 1:1 Scale

8. 1:1 Scale

9. 1:1 Scale

10. 1:1 Scale

11. 1:1 Scale

12. 1:1 Scale

13. 1:1 Scale

14. 1:1 Scale

15. 1:1 Scale

16. 1:1 Scale

17. 1:1 Scale

18. 1:1 Scale

19. 1:1 Scale

20. 1:1 Scale

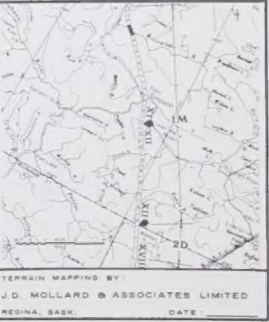
21. 1:1 Scale

22. 1:1 Scale

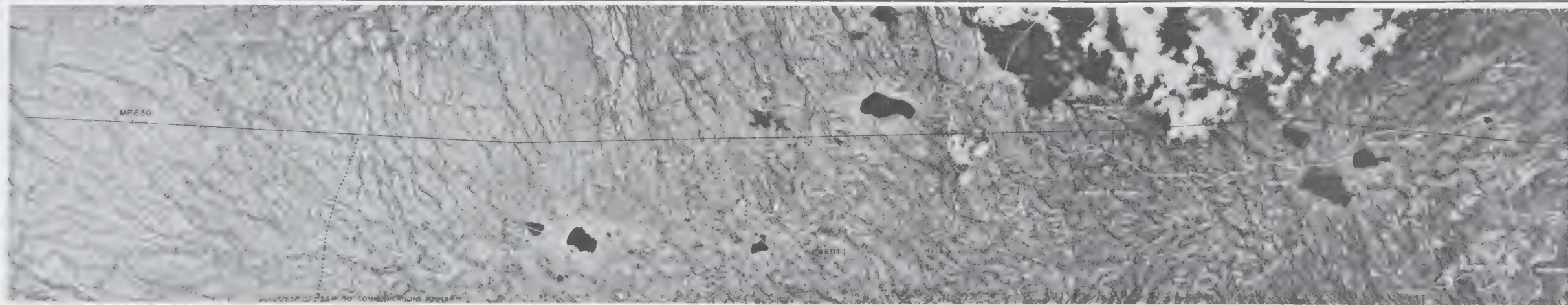
23. 1:1 Scale

24. 1:1 Scale

ENVIRONMENTAL DATA AND PROTECTION MEASURES	FISH		BIRDS		MAMMALS		VEGETATION		LAND USE		OTHERS	
	Unimpaired tributary. Grayling, slimy sculpin, Grayling spawning stream. Sensitive May 1 to Nov. 1.		Willow Lake River: Grayling, humpback whitefish, round whitefish, lake cisco, pike, yellow walleye, lake trout, finescale nase, spottail shiner, emerald shiner, trout perch, longnose sucker, white sucker, slimy sculpin, bassfish. Species are taken near confluence with Moosehead River. Spawning area for pike, round whitefish, grayling and longnose sucker located upstream. PLC area is primarily utilized for summer feeding and rearing for the species listed. Winter flow maintained downstream from PLC by springs which are utilized for overwintering by fish. Sensitive all year round.		Productive upland furbearing habitat, potential woodland caribou. Willow Lake River - mink, beaver, and potential winter movements for moose.		Open white spruce/Labrador tea/bearberry, sparse black spruce/baked appleberry/lichen on silt/clay. Black spruce/feathermoss and sparse black spruce/baked appleberry/lichen on silt/clay. White spruce/rose/feathermoss and trembling aspen/rose on terrace. Immature jack pine/soapberry/twinflower and sparse black spruce/baked appleberry/lichen. Occasional white spruce/rose/feathermoss and trembling aspen/rose occur. Sparse black spruce, tamarack/baked appleberry/lichen on interdrainage areas. White spruce/rose/feathermoss in drainage ways. Sparse black spruce, tamarack/baked appleberry/lichen and open black spruce/Labrador tea/bearberry on peat bogs. White spruce, trembling aspen/sider on white spruce/rose feathermoss associated with drainageways.					



371-5224



4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527
---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

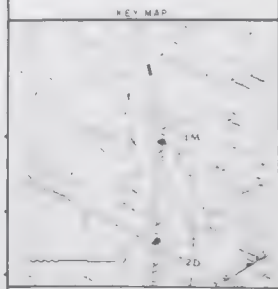
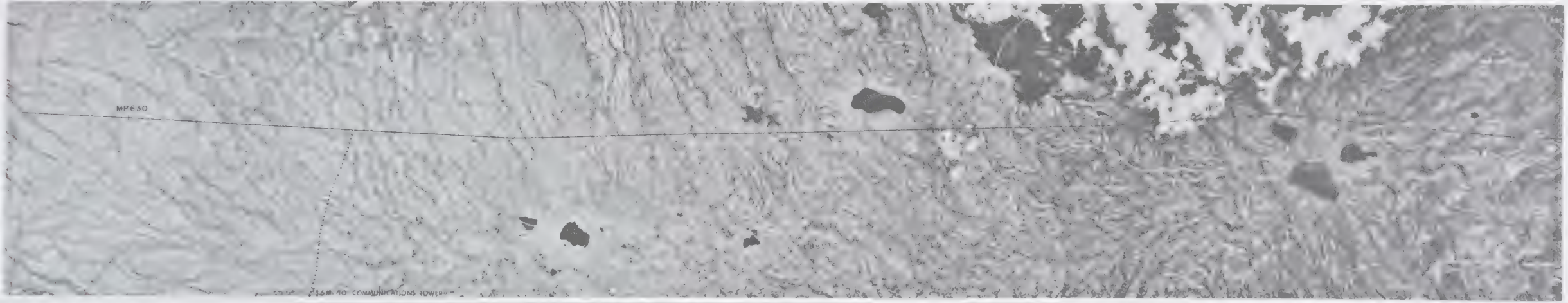
UTM GRID ZONE 10

SCALE 1 miles

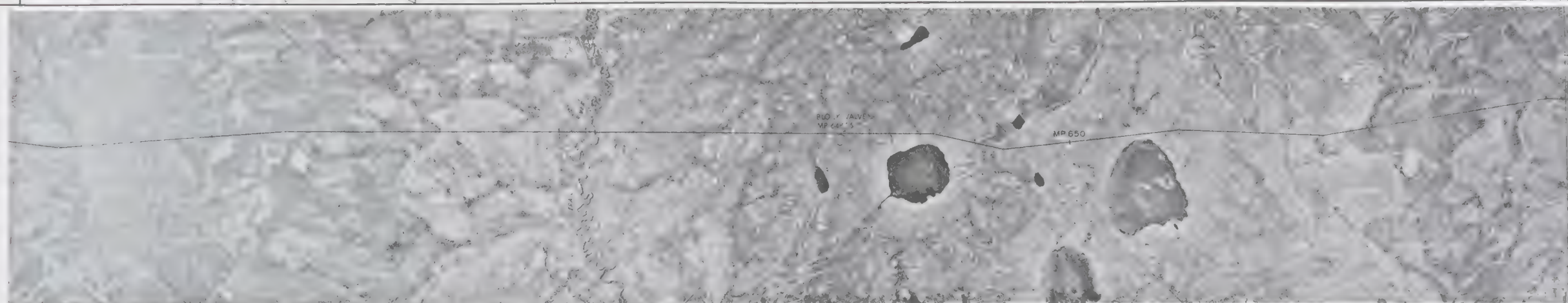
[illegible]

DRILL HOLE DATA

1:50,000 SCALE



1991

[illegible]

UTM GRID ZONE 10

SCALE 10000

PULVINE LEGEND				
1.000	100%	POINT OF INTERSECTION	1.000 100%	PERMANENT ROAD
0.500	50%	ROAD	0.500 50%	ROAD
0.250	25%	MAINTENANCE ROAD	0.250 25%	MEASURING STATION
0.125	12.5%	ROAD	0.125 12.5%	ROAD
0.0625	6.25%	ROAD	0.0625 6.25%	ROAD
0.03125	3.125%	ROAD	0.03125 3.125%	ROAD
0.015625	1.5625%	ROAD	0.015625 1.5625%	ROAD
0.0078125	0.78125%	ROAD	0.0078125 0.78125%	ROAD
0.00390625	0.390625%	ROAD	0.00390625 0.390625%	ROAD
0.001953125	0.1953125%	ROAD	0.001953125 0.1953125%	ROAD
0.0009765625	0.09765625%	ROAD	0.0009765625 0.09765625%	ROAD
0.00048828125	0.048828125%	ROAD	0.00048828125 0.048828125%	ROAD
0.000244140625	0.0244140625%	ROAD	0.000244140625 0.0244140625%	ROAD
0.0001220703125	0.01220703125%	ROAD	0.0001220703125 0.01220703125%	ROAD
0.00006103515625	0.006103515625%	ROAD	0.00006103515625 0.006103515625%	ROAD
0.000030517578125	0.0030517578125%	ROAD	0.000030517578125 0.0030517578125%	ROAD
0.0000152587890625	0.00152587890625%	ROAD	0.0000152587890625 0.00152587890625%	ROAD
0.00000762939453125	0.000762939453125%	ROAD	0.00000762939453125 0.000762939453125%	ROAD
0.000003814697265625	0.0003814697265625%	ROAD	0.000003814697265625 0.0003814697265625%	ROAD
0.0000019073486328125	0.00019073486328125%	ROAD	0.0000019073486328125 0.00019073486328125%	ROAD
0.00000095367431640625	0.000095367431640625%	ROAD	0.00000095367431640625 0.000095367431640625%	ROAD
0.000000476837158203125	0.0000476837158203125%	ROAD	0.000000476837158203125 0.0000476837158203125%	ROAD
0.0000002384185791015625	0.00002384185791015625%	ROAD	0.0000002384185791015625 0.00002384185791015625%	ROAD
0.00000011920928955078125	0.000011920928955078125%	ROAD	0.00000011920928955078125 0.000011920928955078125%	ROAD
0.000000059604644775390625	0.0000059604644775390625%	ROAD	0.000000059604644775390625 0.0000059604644775390625%	ROAD
0.0000000298023223876953125	0.00000298023223876953125%	ROAD	0.0000000298023223876953125 0.00000298023223876953125%	ROAD
0.00000001490116119384765625	0.000001490116119384765625%	ROAD	0.00000001490116119384765625 0.000001490116119384765625%	ROAD
0.000000007450580596923828125	0.0000007450580596923828125%	ROAD	0.000000007450580596923828125 0.0000007450580596923828125%	ROAD
0.0000000037252902984619140625	0.00000037252902984619140625%	ROAD	0.0000000037252902984619140625 0.00000037252902984619140625%	ROAD
0.00000000186264514923095703125	0.000000186264514923095703125%	ROAD	0.00000000186264514923095703125 0.000000186264514923095703125%	ROAD
0.000000000931322574615478515625	0.0000000931322574615478515625%	ROAD	0.000000000931322574615478515625 0.0000000931322574615478515625%	ROAD
0.0000000004656612873077392578125	0.00000004656612873077392578125%	ROAD	0.0000000004656612873077392578125 0.00000004656612873077392578125%	ROAD
0.00000000023283064365386962890625	0.000000023283064365386962890625%	ROAD	0.00000000023283064365386962890625 0.000000023283064365386962890625%	ROAD
0.000000000116415321826934814453125	0.0000000116415321826934814453125%	ROAD	0.000000000116415321826934814453125 0.0000000116415321826934814453125%	ROAD
0.0000000000582076609134674072265625	0.00000000582076609134674072265625%	ROAD	0.0000000000582076609134674072265625 0.00000000582076609134674072265625%	ROAD
0.00000000002910383045673370361328125	0.000000002910383045673370361328125%	ROAD	0.0000	

[illegible][illegible]

GENERAL: NO. 43


1 THE TERRAIN AND SOILS INFORMATION ON THIS DRAWING IS BASED ON AIRPHOTO INTERPRETATION AND DRILL HOLE DATA AS INDICATED. IT IS NOT A GUARANTEE OF ACCURACY OR A REPRESENTATION OF THE ACTUAL CONDITIONS. CONTRACTORS RESPONSIBILITY TO EXPLORER: HOLE INFORMATION

2 SEGMENT WILPOST EQUALS MATCH LINE WILPOST PLUS CHIMBEE HOLE

3 SEE DWG FOR HOLEWELTHRE USED FOR SOIL DESCRIPTION ON DRILL HOLE LOGS

4 MINIMUM DEPTH OF COVER = 3.5 FEET

AERIAL PHOTOGRAPH	
ROLL NO	PHOTO NO
BB 74407	78 - 88
OPERATING LICENSE NO	
CONSTRUCTION PERMIT NO	
MIN TEST PRESSURE	2300 PSI
MAX OPERATING PRESSURE	1800 PSI

 NORTHERN IN-TERN COMPANY LIMITED
CALGARY ALBERTA
ENGINEERS-FEE

CANADIAN ARCTIC GAS PIPELINE LIMITED

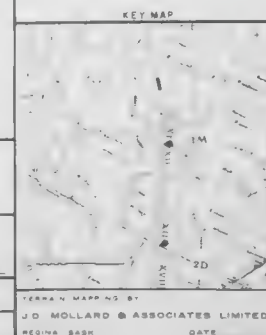
GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA
NORTHWEST TERRITORIES DISTRICT OF WAKESWICK & LUTHER TERRITORY

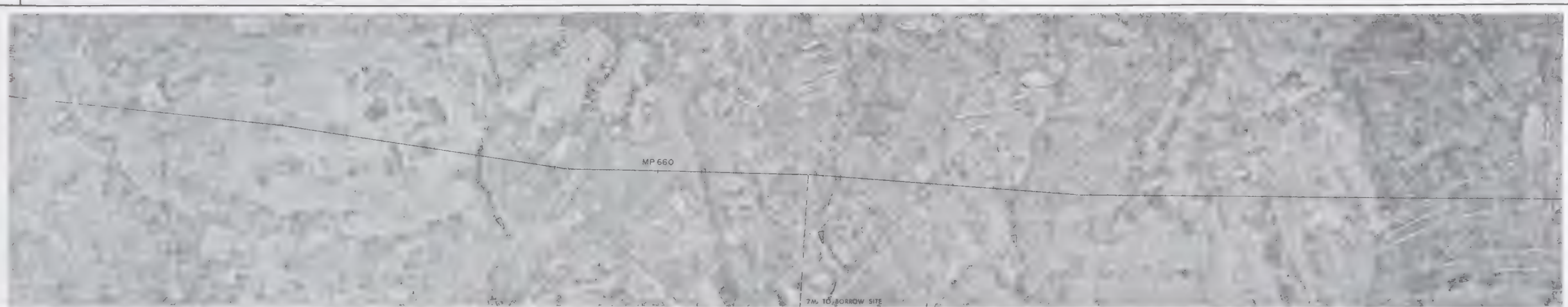
FORM NO. 24

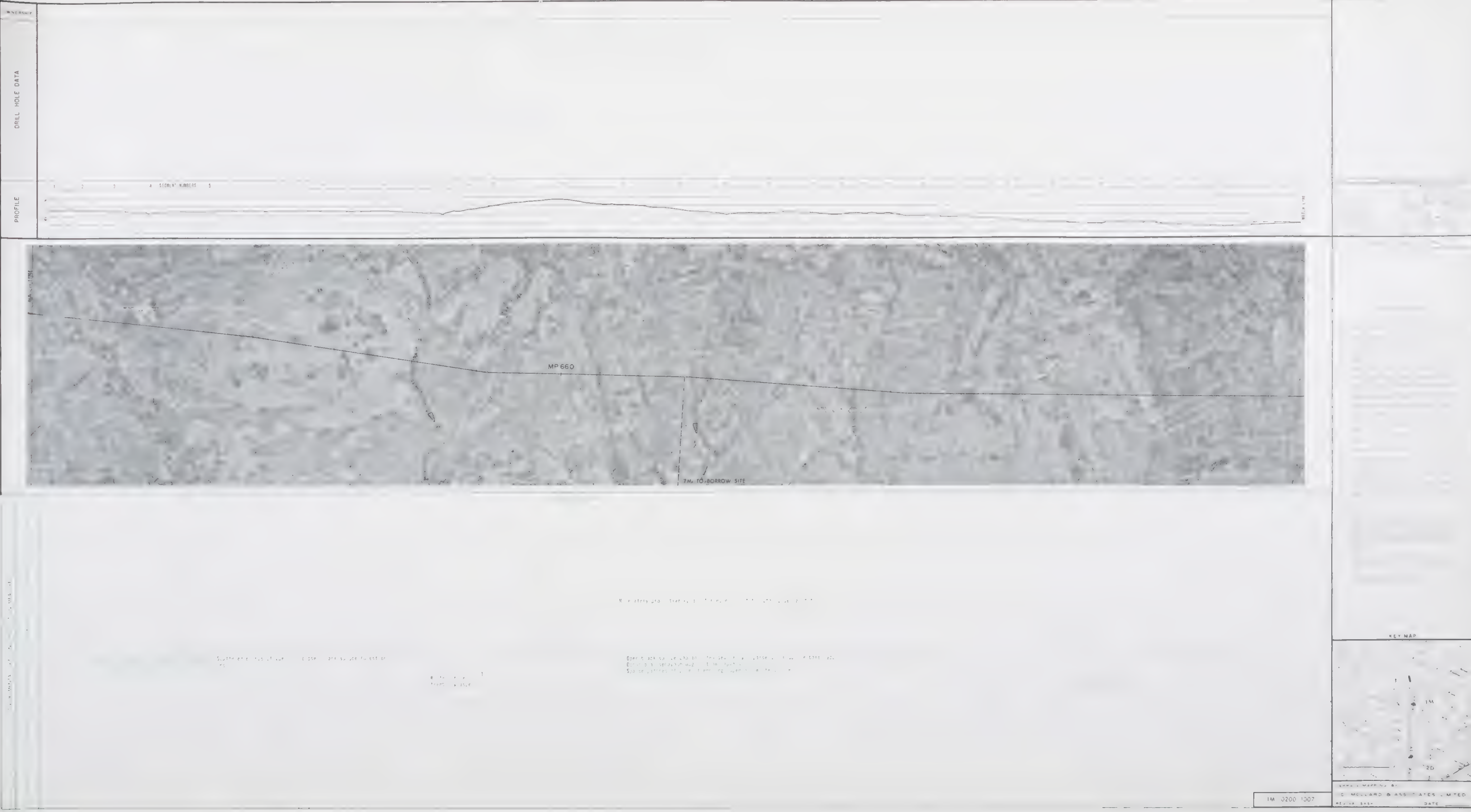
DATE: 11-1-1968

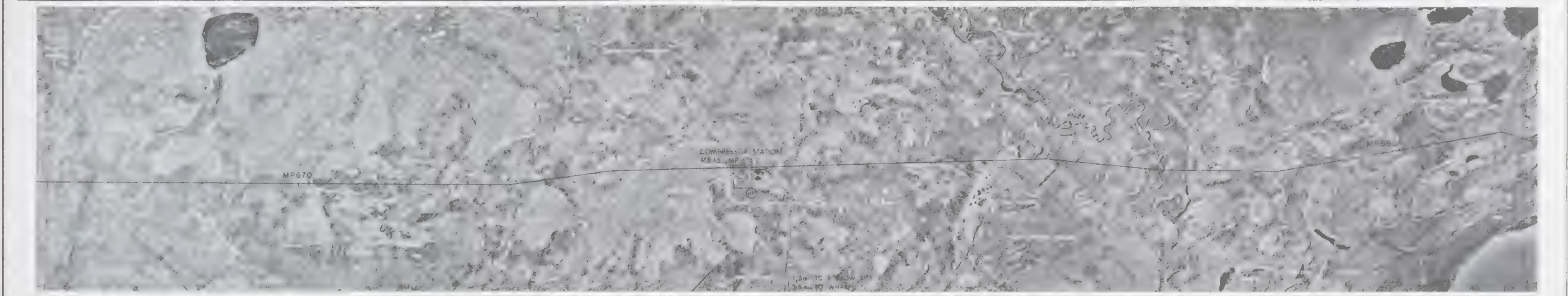
APP'D: [Signature] 11-1-1968

1M - 0200 - 10



[illegible]





PIPELINE LEGEND

- PERMANENT ROAD
- TEMPORARY ROAD
- CONSTRUCTION TOWER
- PIPELINE
- WATER TAIL

NOTES

1. THE TERRAIN AND SOIL INFORMATION ON THIS DRAWING IS BASED ON AERIAL PHOTOGRAPHY AND DRILL HOLE DATA AS INDICATED. THE CONTRACTOR RESPONSIBILITY TO ASSURE HIMSELF OF THIS INFORMATION.

2. MINIMUM DEPTH OF COVER SHALL BE 1.0 FEET PLUS CHANGE VALUE.

3. FOR REMEDIATION USED FOR SOIL DESCRIPTION ON DRILL HOLE LOGS.

4. MINIMUM DEPTH OF COVER SHALL BE 1.0 FEET.

AIRIAL PHOTOGRAPHY

ROLL NO.	PHOTO NO.
887407	100-112

OPERATING LICENSE NO.

CONSTRUCTION PERMIT NO.

WATER OPERATING PRESSURE 1800 PSI

DATE 1980

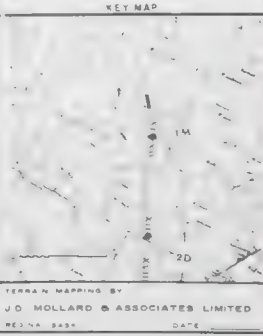
REVISION

SCALE 1:2000

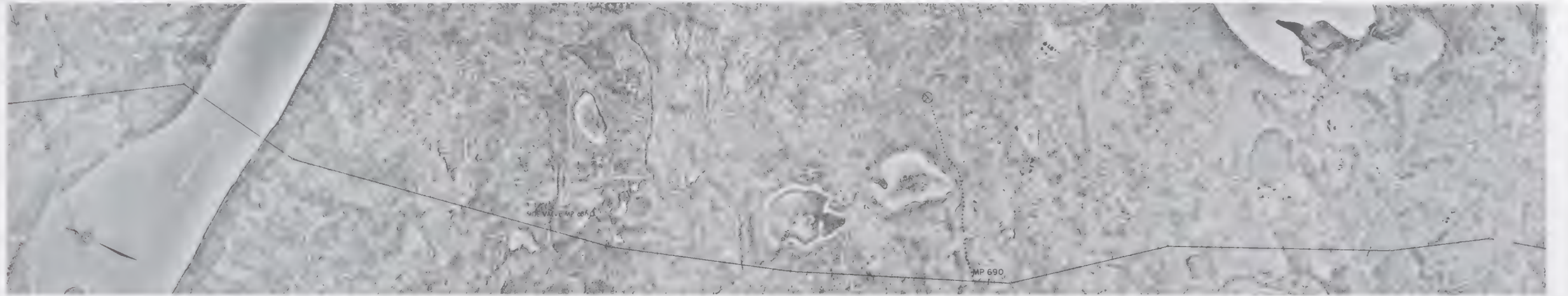
1M-0200-1008

TERRAIN MAPPING BY J.O. MOLLARD & ASSOCIATES LIMITED

DATE



1994



The drawing is a technical illustration of a bridge structure, likely a girder bridge with a central pier. It includes a plan view and a cross-section.

Plan View Dimensions (Approximate):

- Overall width: 100.00
- Overall length: 100.00
- Central pier width: 10.00
- Central pier length: 10.00
- Distance from pier to end: 45.00
- Distance from pier to centerline: 22.50

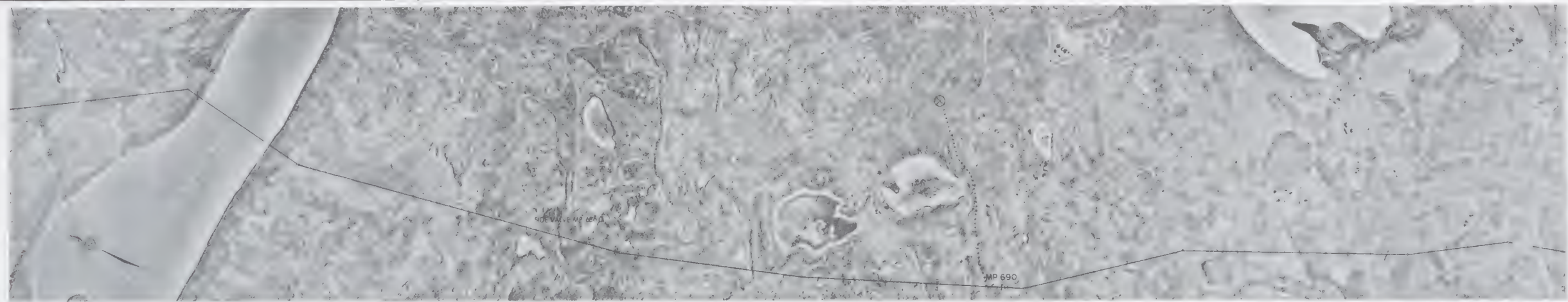
Cross-Section Dimensions (Approximate):

- Overall width: 100.00
- Overall height: 10.00
- Central pier height: 10.00
- Distance from pier to end: 45.00
- Distance from pier to centerline: 22.50

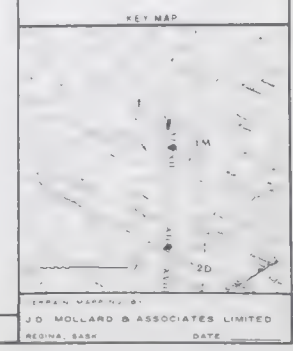
Structural Details:

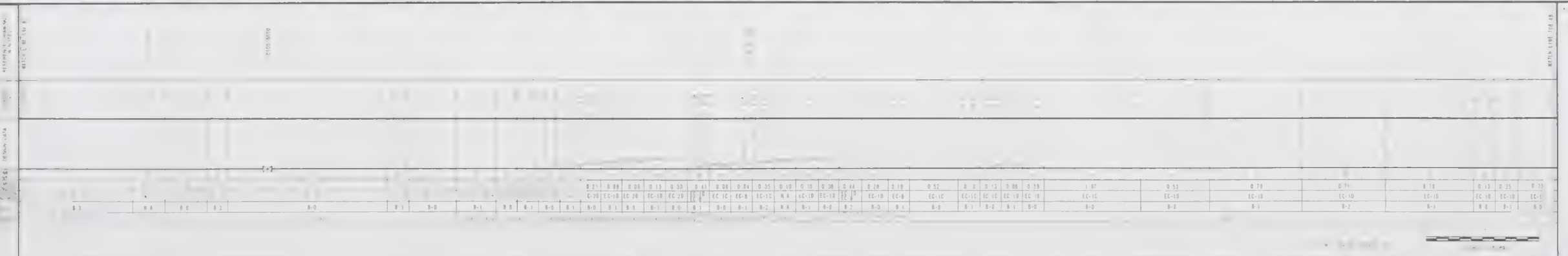
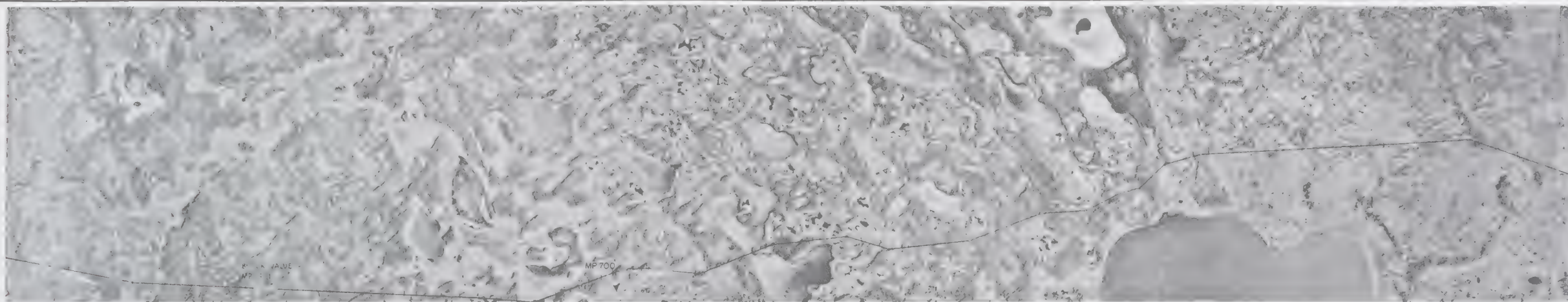
- The bridge deck is shown with a central opening and a pier.
- The pier is labeled with "Pier" and "Pier" on the plan view.
- The bridge deck is labeled with "Deck" and "Deck" on the cross-section.
- The drawing includes various structural details such as reinforcement bars, joints, and connections.

[illegible]



Pine couple, yew, flower and white spruce
 Yellow pine, cedar, Spruce, fir, fir, fir
 Insects etc.

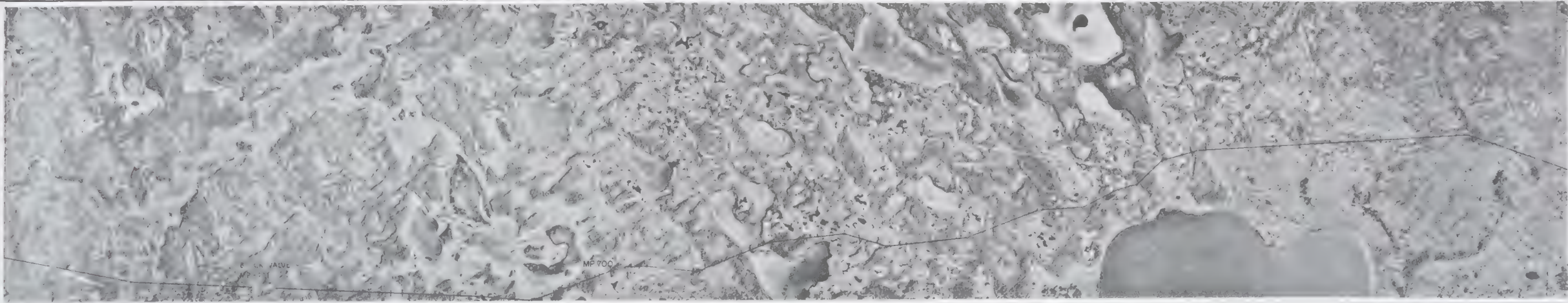


[illegible]

OWNERSHIP

DRILL HOLE DATA

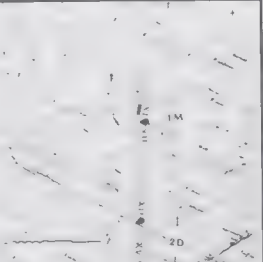
PIPER FILE



1000
500
0
500
1000

1000
500
0
500
1000

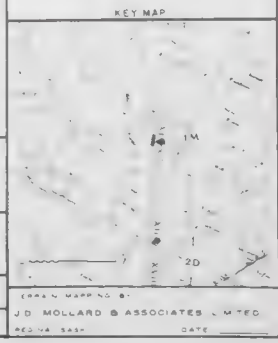
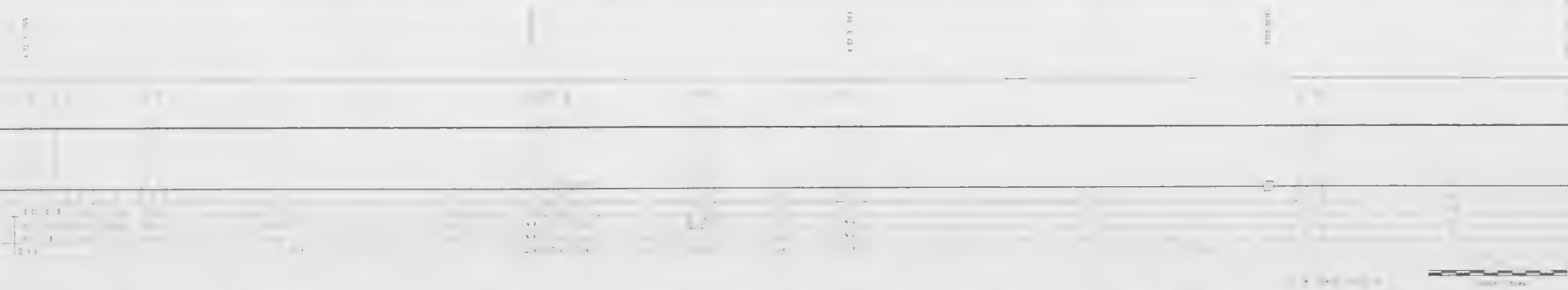
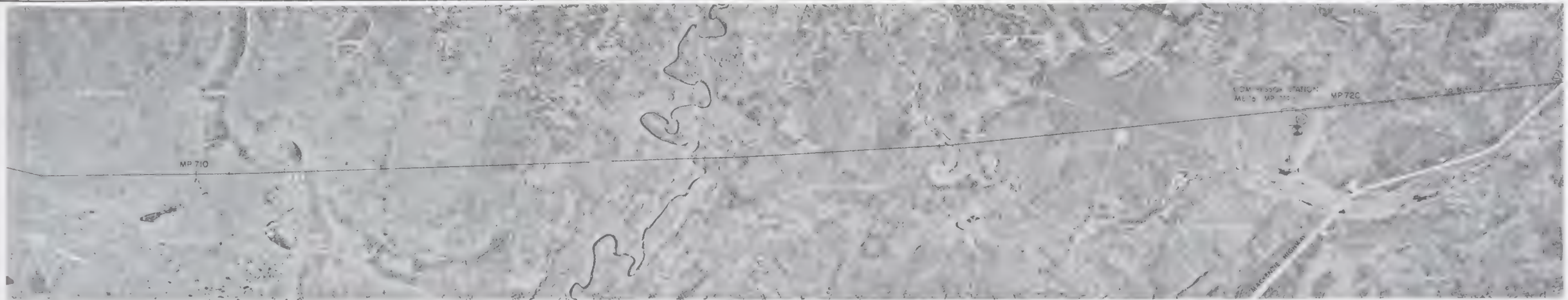
KEY MAP



1M-0200-1010

VEPRAN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK. DATE

31. 29.3

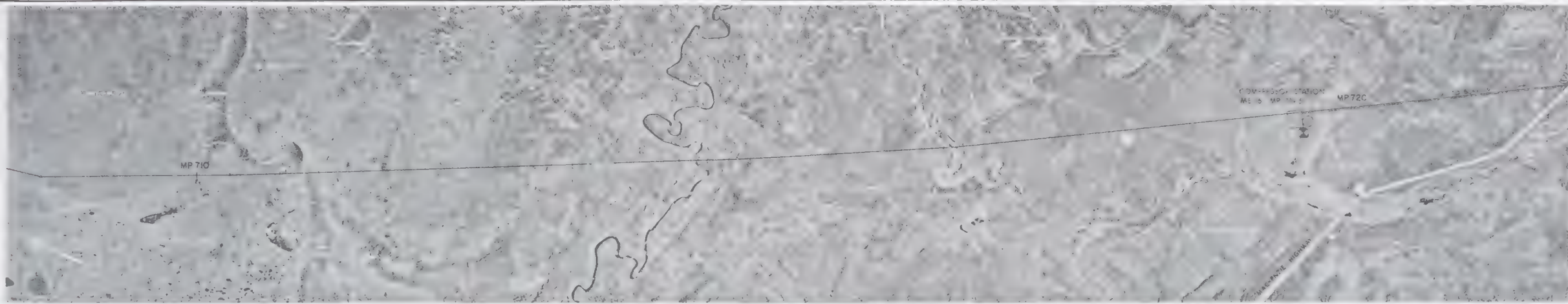


PIPELINE LEGEND		MISCELLANEOUS MATERIALS		GENERAL NOTES		PHOTO NO.		CANADIAN ARCTIC GAS PIPELINE LIMITED	
						136 145		NORTHERN ENGINEERING SERVICES COMPANY LIMITED	
								ENGINEER FOR CANADIAN ARCTIC GAS PIPELINE LIMITED	
								GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA	
								NORTHWEST TERRITORIES DISTRICT OF WATERLOO & PLANNING DEPT.	
								UPSTREAM S.P. 708 DOWNSTREAM S.P. 712	
								DATE 1975	
								BY J.H. 1975	
								IM-0200-1011	

INTERIOR

DRIEL HOLE DATA

MP 710



VEGETATION AND SOIL DATA

MP 710

Open black spruce Labrador tea heathery on peat plateau

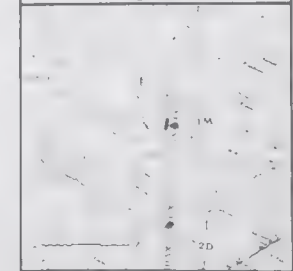
Open black spruce Labrador tea heathery on peat plateau
Peat is dark grey - depressions are moss

Open black spruce Labrador tea heathery on peat plateau

Open black spruce Labrador tea heathery on peat plateau

Open black spruce Labrador tea heathery on peat plateau
Peat is dark grey - depressions are moss

KEY MAP



TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REVISION 3/84 DATE

IM-0200-1011

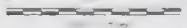
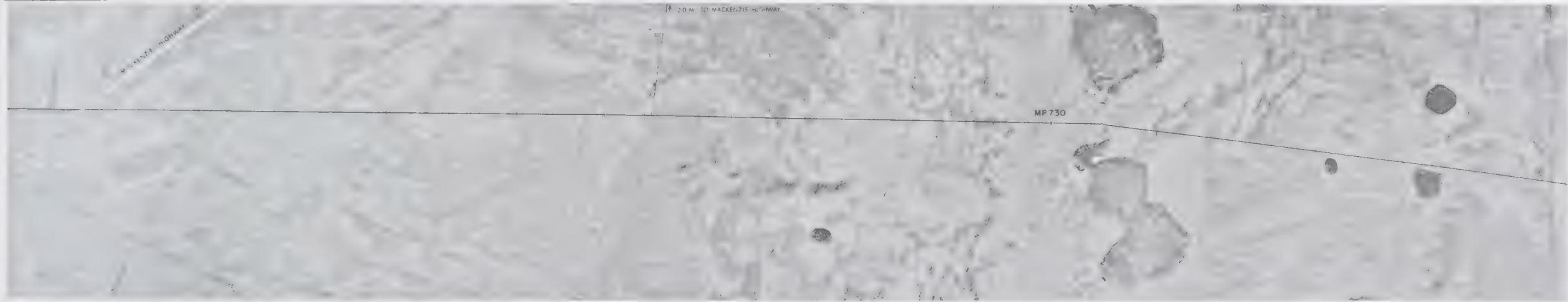
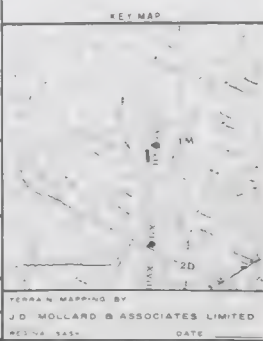
[illegible][illegible]

Figure 1 is a map of the study area in the northern Adriatic. The map shows the coastline from Trieste in the north to the Gulf of Genoa in the south. Latitude and longitude coordinates are marked along the edges: 45° 30' N, 16° 30' E, 17° 30' E, 18° 30' E, 19° 30' E, 20° 30' E, 44° 30' N, 45° 30' N, 46° 30' N. A legend in the top right corner defines symbols: a dot for 'STATION', a wavy line for 'CONTINENTAL SHELF', a solid line for 'DEEP', and a shaded area for 'WATER'. The map shows several sampling stations marked with dots, with some labeled with numbers like 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. The map also shows the location of the 'Gulf of Genoa' and the 'Ligurian Sea'.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60
 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90
 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120
 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150
 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180
 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210
 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240
 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270
 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300
 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330
 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360
 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390
 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420
 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450
 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480
 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510
 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540
 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570
 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600
 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630
 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660
 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690
 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720
 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750
 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780
 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810
 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840
 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870
 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900
 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930
 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960
 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990
 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1

DATE	TIME	TEST	TEST	TEST
10/10/55	145	PHOTO	145	135
PEATING LICENSURE UNIT, 100 PERCENT				
M. N. TEST PRESSURE 100 PSI				
MAX. PEATING PRESSURE 100 PSI				

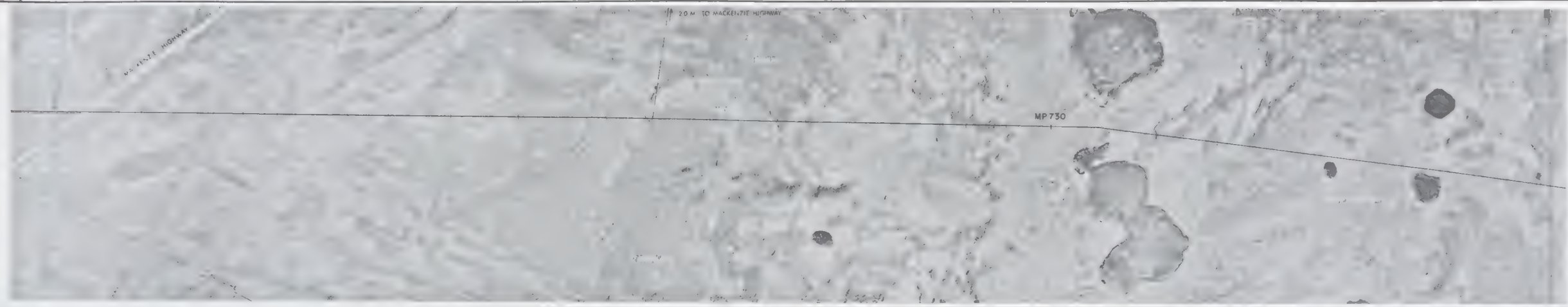
[illegible]

SECTION P
DRILL HOLE DATA
DRILLER
DATE

SECTION NUMBER

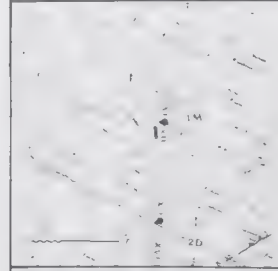
DEPTH

DEPTH



TOWN OF THERMANT

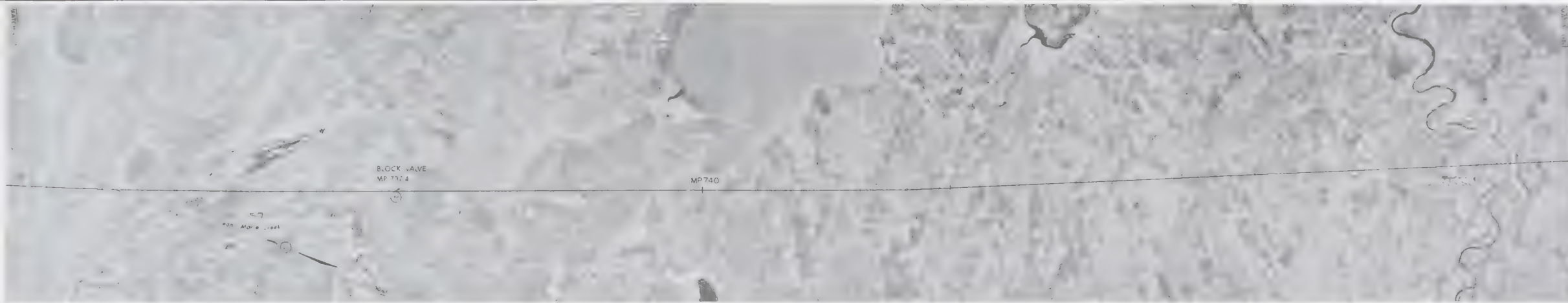
KEY MAP



1M-0200-1012

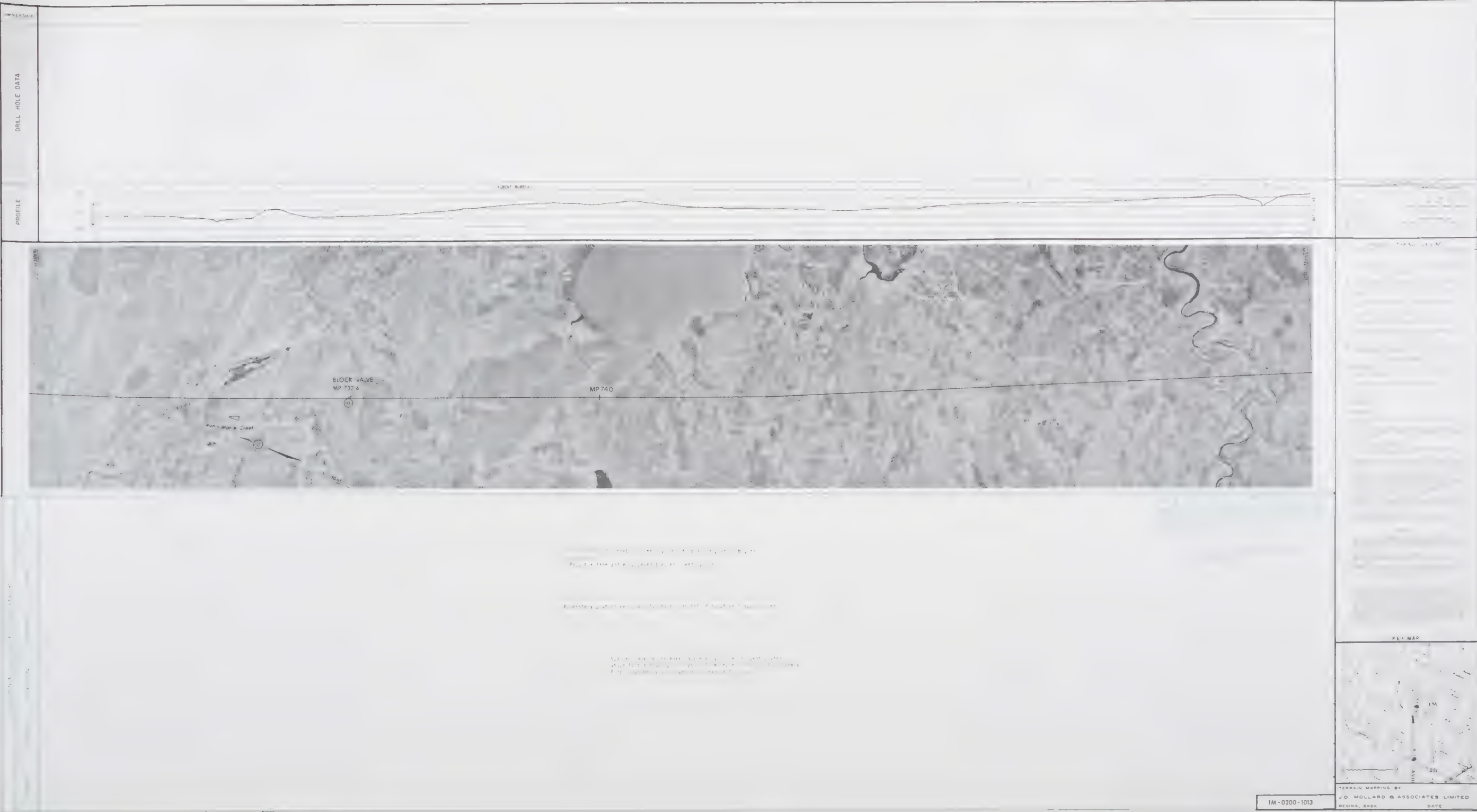
JO MOLLARD & ASSOCIATES LIMITED
REGINA, SASK. DATE

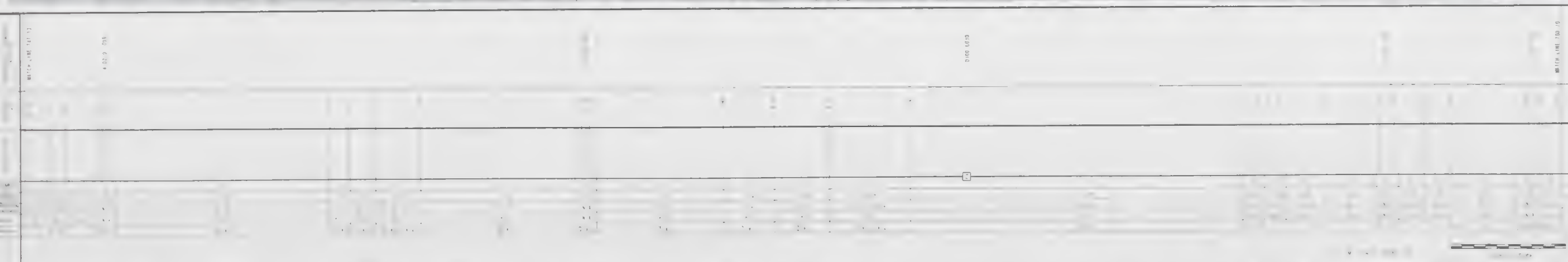
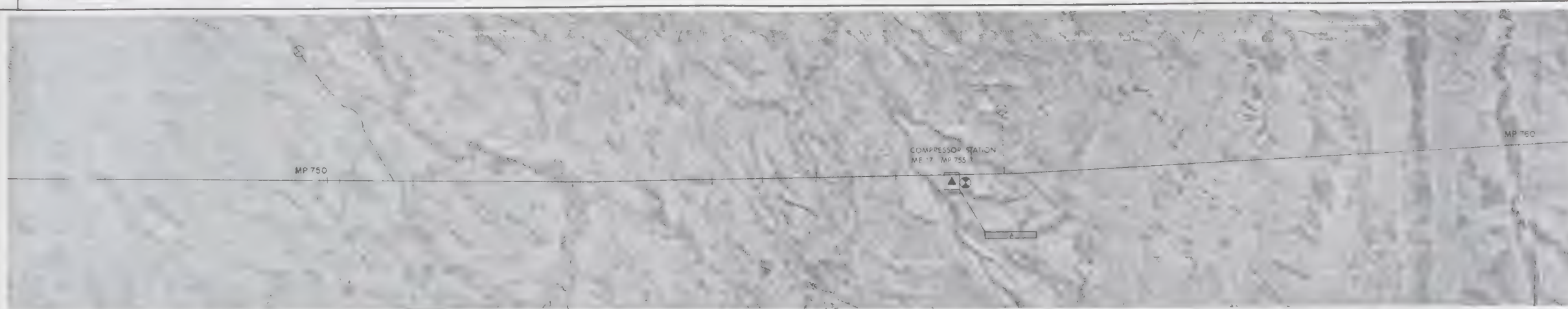
3. 2. 6. 1



UTM GRID ZONE 10

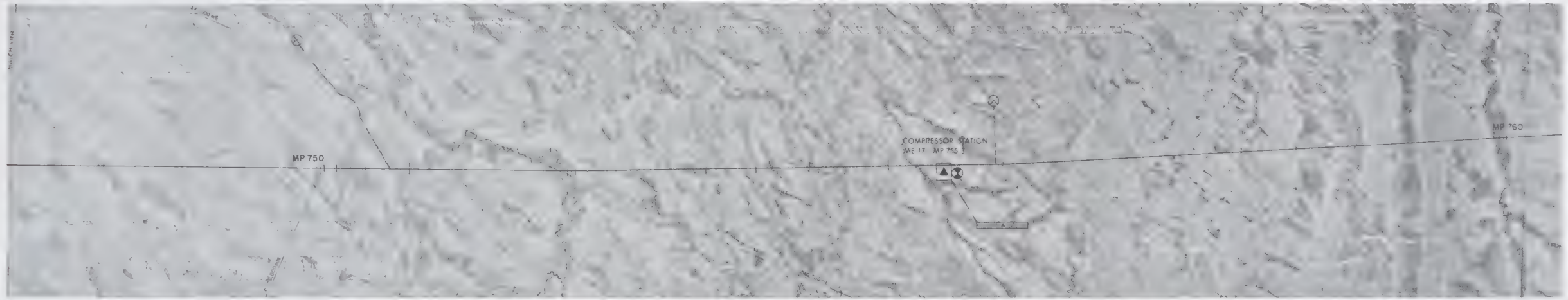
[illegible]



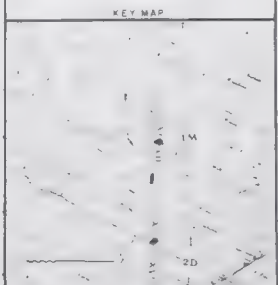


PIPELINE LEGEND 		PIPE DATA PIPE NO. 1 PIPE SIZE 12" 13" 14" 15" 16" 18" 20" 24" 30" 36" 42" 48" 54" 60" 72" 84" 96" 108" 120" 144" 168" 192" 216" 240" 270" 300" 360" 420" 480" 540" 600" 720" 840" 960" 1080" 1200" 1440" 1680" 1920" 2160" 2400" 2700" 3000" 3600" 4200" 4800" 5400" 6000" 7200" 8400" 9600" 10800" 12000" 14400" 16800" 19200" 21600" 24000" 27000" 30000" 36000" 42000" 48000" 54000" 60000" 72000" 84000" 96000" 108000" 120000" 144000" 168000" 192000" 216000" 240000" 270000" 300000" 360000" 420000" 480000" 540000" 600000" 720000" 840000" 960000" 1080000" 1200000" 1440000" 1680000" 1920000" 2160000" 2400000" 2700000" 3000000" 3600000" 4200000" 4800000" 5400000" 6000000" 7200000" 8400000" 9600000" 10800000" 12000000" 14400000" 16800000" 19200000" 21600000" 24000000" 27000000" 30000000" 36000000" 42000000" 48000000" 54000000" 60000000" 72000000" 84000000" 96000000" 108000000" 120000000" 144000000" 168000000" 192000000" 216000000" 240000000" 270000000" 300000000" 360000000" 420000000" 480000000" 540000000" 600000000" 720000000" 840000000" 960000000" 1080000000" 1200000000" 1440000000" 1680000000" 1920000000" 2160000000" 2400000000" 2700000000" 3000000000" 3600000000" 4200000000" 4800000000" 5400000000" 6000000000" 7200000000" 8400000000" 9600000000" 10800000000" 12000000000" 14400000000" 16800000000" 19200000000" 21600000000" 24000000000" 27000000000" 30000000000" 36000000000" 42000000000" 48000000000" 54000000000" 60000000000" 72000000000" 84000000000" 96000000000" 108000000000" 120000000000" 144000000000" 168000000000" 192000000000" 216000000000" 240000000000" 270000000000" 300000000000" 360000000000" 420000000000" 480000000000" 540000000000" 600000000000" 720000000000" 840000000000" 960000000000" 1080000000000" 1200000000000" 1440000000000" 1680000000000" 1920000000000" 2160000000000" 2400000000000" 2700000000000" 3000000000000" 3600000000000" 4200000000000" 4800000000000" 5400000000000" 6000000000000" 7200000000000" 8400000000000" 9600000000000" 10800000000000" 12000000000000" 14400000000000" 16800000000000" 19200000000000" 21600000000000" 24000000000000" 27000000000000" 30000000000000" 36000000000000" 42000000000000" 48000000000000" 54000000000000" 60000000000000" 72000000000000" 84000000000000" 96000000000000" 108000000000000" 120000000000000" 144000000000000" 168000000000000" 192000000000000" 216000000000000" 240000000000000" 270000000000000" 300000000000000" 360000000000000" 420000000000000" 480000000000000" 540000000000000" 600000000000000" 720000000000000" 840000000000000" 960000000000000" 1080000000000000" 1200000000000000" 1440000000000000" 1680000000000000" 1920000000000000" 2160000000000000" 2400000000000000" 2700000000000000" 3000000000000000" 3600000000000000" 4200000000000000" 4800000000000000" 5400000000000000" 6000000000000000" 7200000000000000" 8400000000000000" 9600000000000000" 10800000000000000" 12000000000000000" 14400000000000000" 16800000000000000" 19200000000000000" 21600000000000000" 24000000000000000" 27000000000000000" 30000000000000000" 36000000000000000" 42000000000000000" 48000000000000000" 54000000000000000" 60000000000000000" 72000000000000000" 84000000000000000" 96000000000000000" 108000000000000000" 120000000000000000" 144000000000000000" 168000000000000000" 192000000000000000" 216000000000000000" 240000000000000000" 270000000000000000" 300000000000000000" 360000000000000000" 420000000000000000" 480000000000000000" 540000000000000000" 600000000000000000" 720000000000000000" 840000000000000000" 960000000000000000" 1080000000000000000" 1200000000000000000" 1440000000000000000" 1680000000000000000" 1920000000000000000" 2160000000000000000" 2400000000000000000" 2700000000000000000" 3000000000000000000" 3600000000000000000" 4200000000000000000" 4800000000000000000" 5400000000000000000" 6000000000000000000" 7200000000000000000" 8400000000000000000" 9600000000000000000" 10800000000000000000" 12000000000000000000" 14400000000000000000" 16800000000000000000" 19200000000000000000" 21600000000000000000" 24000000000000000000" 27000000000000000000" 30000000000000000000"	
----------------------------	--	--	--

OWNER'S
PROFILE
DRILL HOLE DATA



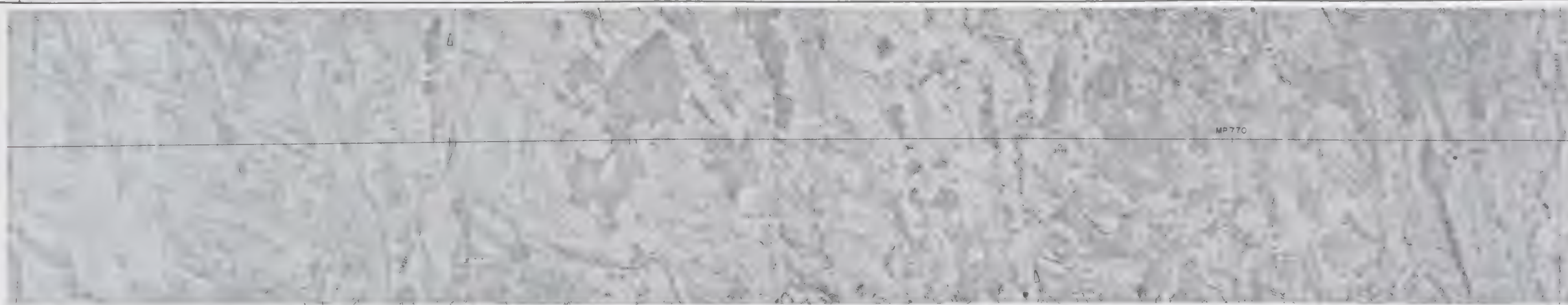
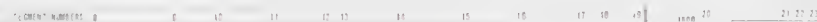
1. THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF TERRAIN MAPPING BY J.D. MOLLARD & ASSOCIATES LIMITED. IT IS TO BE USED ONLY FOR THE PROJECT AND PURPOSE SPECIFICALLY IDENTIFIED IN THE ORDER. IT IS NOT TO BE REPRODUCED, COPIED, OR DISTRIBUTED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF TERRAIN MAPPING BY J.D. MOLLARD & ASSOCIATES LIMITED.



TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK. DATE

IM-0200-1014

664.374.5

[illegible]

PIPELINE LEGEND

Symbol	Description
Solid line	Delta Conveyance Project (DAP)
Dashed line	Delta Cross Connection (DCC)
Thick solid line	Levee
Thin solid line	Canal
Circle with cross	Water Pumping Station
Circle with dot	Water Treatment Plant
Circle with X	Water Storage Facility
Circle with triangle	Water Distribution Facility
Circle with square	Water Intake Facility
Circle with diamond	Water Outlet Facility
Circle with circle	Water Treatment Facility
Circle with star	Water Distribution Facility
Circle with cross	Water Pumping Station
Circle with dot	Water Treatment Plant
Circle with X	Water Storage Facility
Circle with triangle	Water Distribution Facility
Circle with square	Water Intake Facility
Circle with diamond	Water Outlet Facility
Circle with circle	Water Treatment Facility
Circle with star	Water Distribution Facility

PIPE DATA			QUANTITY	MISCELLANEOUS MATERIAL		
NO.	DATE	DESCRIPTION		NO.	DATE	DESCRIPTION
1	10/1/50	10' x 10' x 10'	1	1	10/1/50	10' x 10' x 10'
2	10/1/50	10' x 10' x 10'	1	2	10/1/50	10' x 10' x 10'
3	10/1/50	10' x 10' x 10'	1	3	10/1/50	10' x 10' x 10'
4	10/1/50	10' x 10' x 10'	1	4	10/1/50	10' x 10' x 10'
5	10/1/50	10' x 10' x 10'	1	5	10/1/50	10' x 10' x 10'
6	10/1/50	10' x 10' x 10'	1	6	10/1/50	10' x 10' x 10'
7	10/1/50	10' x 10' x 10'	1	7	10/1/50	10' x 10' x 10'
8	10/1/50	10' x 10' x 10'	1	8	10/1/50	10' x 10' x 10'
9	10/1/50	10' x 10' x 10'	1	9	10/1/50	10' x 10' x 10'
10	10/1/50	10' x 10' x 10'	1	10	10/1/50	10' x 10' x 10'
11	10/1/50	10' x 10' x 10'	1	11	10/1/50	10' x 10' x 10'
12	10/1/50	10' x 10' x 10'	1	12	10/1/50	10' x 10' x 10'
13	10/1/50	10' x 10' x 10'	1	13	10/1/50	10' x 10' x 10'
14	10/1/50	10' x 10' x 10'	1	14	10/1/50	10' x 10' x 10'
15	10/1/50	10' x 10' x 10'	1	15	10/1/50	10' x 10' x 10'
16	10/1/50	10' x 10' x 10'	1	16	10/1/50	10' x 10' x 10'
17	10/1/50	10' x 10' x 10'	1	17	10/1/50	10' x 10' x 10'
18	10/1/50	10' x 10' x 10'	1	18	10/1/50	10' x 10' x 10'
19	10/1/50	10' x 10' x 10'	1	19	10/1/50	10' x 10' x 10'
20	10/1/50	10' x 10' x 10'	1	20	10/1/50	10' x 10' x 10'
21	10/1/50	10' x 10' x 10'	1	21	10/1/50	10' x 10' x 10'
22	10/1/50	10' x 10' x 10'	1	22	10/1/50	10' x 10' x 10'
23	10/1/50	10' x 10' x 10'	1	23	10/1/50	10' x 10' x 10'
24	10/1/50	10' x 10' x 10'	1	24	10/1/50	10' x 10' x 10'
25	10/1/50	10' x 10' x 10'	1	25	10/1/50	10' x 10' x 10'
26	10/1/50	10' x 10' x 10'	1	26	10/1/50	10' x 10' x 10'
27	10/1/50	10' x 10' x 10'	1	27	10/1/50	10' x 10' x 10'
28	10/1/50	10' x 10' x 10'	1	28	10/1/50	10' x 10' x 10'
29	10/1/50	10' x 10' x 10'	1	29	10/1/50	10' x 10' x 10'
30	10/1/50	10' x 10' x 10'	1	30	10/1/50	10' x 10' x 10'
31	10/1/50	10' x 10' x 10'	1	31	10/1/50	10' x 10' x 10'
32	10/1/50	10' x 10' x 10'	1	32	10/1/50	10' x 10' x 10'
33	10/1/50	10' x 10' x 10'	1	33	10/1/50	10' x 10' x 10'
34	10/1/50	10' x 10' x 10'	1	34	10/1/50	10' x 10' x 10'
35	10/1/50	10' x 10' x 10'	1	35	10/1/50	10' x 10' x 10'
36	10/1/50	10' x 10' x 10'	1	36	10/1/50	10' x 10' x 10'
37	10/1/50	10' x 10' x 10'	1	37	10/1/50	10' x 10' x 10'
38	10/1/50	10' x 10' x 10'	1	38	10/1/50	10' x 10' x 10'
39	10/1/50	10' x 10' x 10'	1	39	10/1/50	10' x 10' x 10'
40	10/1/50	10' x 10' x 10'	1	40	10/1/50	10' x 10' x 10'
41	10/1/50	10' x 10' x 10'	1	41	10/1/50	10' x 10' x 10'
42	10/1/50	10' x 10' x 10'	1	42	10/1/50	10' x 10' x 10'
43	10/1/50	10' x 10' x 10'	1	43	10/1/50	10' x 10' x 10'
44	10/1/50	10' x 10' x 10'	1	44	10/1/50	10' x 10' x 10'
45	10/1/50	10' x 10' x 10'	1	45	10/1/50	10' x 10' x 10'
46	10/1/50	10' x 10' x 10'	1	46	10/1/50	10' x 10' x 10'
47	10/1/50	10' x 10' x 10'	1	47	10/1/50	10' x 10' x 10'
48	10/1/50	10' x 10' x 10'	1	48	10/1/50	10' x 10' x 10'
49	10/1/50	10' x 10' x 10'	1	49	10/1/50	10' x 10' x 10'
50	10/1/50	10' x 10' x 10'	1	50	10/1/50	10' x 10' x 10'
51	10/1/50	10' x 10' x 10'	1	51	10/1/50	10' x 10' x 10'
52	10/1/50	10' x 10' x 10'	1	52	10/1/50	10' x 10' x 10'
53	10/1/50	10' x 10' x 10'	1	53	10/1/50	10' x 10' x 10'
54	10/1/50	10' x 10' x 10'	1	54	10/1/50	10' x 10' x 10'
55	10/1/50	10' x 10' x 10'	1	55	10/1/50	10' x 10' x 10'
56	10/1/50	10' x 10' x 10'	1	56	10/1/50	10' x 10' x 10'
57	10/1/50	10' x 10' x 10'	1	57	10/1/50	10' x 10' x 10'
58	10/1/50	10' x 10' x 10'	1	58	10/1/50	10' x 10' x 10'
59	10/1/50	10' x 10' x 10'	1	59	10/1/50	10' x 10' x 10'
60	10/1/50	10' x 10' x 10'	1	60	10/1/50	10' x 10' x 10'
61	10/1/50	10' x 10' x 10'	1	61	10/1/50	10' x 10' x 10'
62	10/1/50	10' x 10' x 10'	1	62	10/1/50	10' x 10' x 10'
63	10/1/50	10' x 10' x 10'	1	63	10/1/50	10' x 10' x 10'
64	10/1/50	10' x 10' x 10'	1	64	10/1/50	10' x 10' x 10'
65	10/1/50	10' x 10' x 10'	1	65	10/1/50	10' x 10' x 10'
66	10/1/50	10' x 10' x 10'	1	66	10/1/50	10' x 10' x 10'
67	10/1/50	10' x 10' x 10'	1	67	10/1/50	10' x 10' x 10'
68	10/1/50	10' x 10' x 10'	1	68	10/1/50	10' x 10' x 10'
69	10/1/50	10' x 10' x 10'	1	69	10/1/50	10' x 10' x 10'
70	10/1/50	10' x 10' x 10'	1	70	10/1/50	10' x 10' x 10'
71	10/1/50	10' x 10' x 10'	1	71	10/1/50	10' x 10' x 10'
72	10/1/50	10' x 10' x 10'	1	72	10/1/50	10' x 10' x 10'
73	10/1/50	10' x 10' x 10'	1	73	10/1/50	10' x 10' x 10'
74	10/1/50	10' x 10' x 10'	1	74	10/1/50	10' x 10' x 10'
75	10/1/50	10' x 10' x 10'	1	75	10/1/50	10' x 10' x 10'
76	10/1/50	10' x 10' x 10'	1	76	10/1/50	10' x 10' x 10'
77	10/1/50	10' x 10' x 10'	1	77	10/1/50	10' x 10' x 10'
78	10/1/50	10' x 10' x 10'	1	78	10/1/50	10' x 10' x 10'
79	10/1/50	10' x 10' x 10'	1	79	10/1/50	10' x 10' x 10'
80	10/1/50	10' x 10' x 10'	1	80	10/1/50	10' x 10' x 10'
81	10/1/50	10' x 10' x 10'	1	81	10/1/50	10' x 10' x 10'
82	10/1/50	10' x 10' x 10'	1	82	10/1/50	10' x 10' x 10'
83	10/1/50	10' x 10' x 10'	1	83	10/1/50	10' x 10' x 10'
84	10/1/50	10' x 10' x 10'	1	84	10/1/50	10' x 10' x 10'
85	10/1/50	10' x 10' x 10'	1	85	10/1/50	10' x 10' x 10'
86	10/1/50	10' x 10' x 10'	1	86	10/1/50	10' x 10' x 10'
87	10/1/50	10' x 10' x 10'	1	87	10/1/50	10' x 10' x 10'
88	10/1/50	10' x 10' x 10'	1	88	10/1/50	10' x 10' x 10'
89	10/1/50	10' x 10' x 10'	1	89	10/1/50	10' x 10' x 10'
90	10/1/50	10' x 10' x 10'	1	90	10/1/50	10' x 10' x 10'
91	10/1/50	10' x 10' x 10'	1	91	10/1/50	10' x 10' x 10'
92	10/1/50	10' x 10' x 10'	1	92	10/1/50	10' x 10' x 10'
93	10/1/50	10' x 10' x 10'	1	93	10/1/50	10' x 10' x 10'
94	10/1/50	10' x 10' x 10'	1	94	10/1/50	10' x 10' x 10'
95	10/1/50	10' x 10' x 10'	1	95	10/1/50	10' x 10' x 10'
96	10/1/50	10' x 10' x 10'	1	96	10/1/50	10' x 10' x 10'
97	10/1/50	10' x 10' x 10'	1	97	10/1/50	10' x 10' x 10'
98	10/1/50	10' x 10' x 10'	1	98	10/1/50	10' x 10' x 10'
99	10/1/50	10' x 10' x 10'	1	99	10/1/50	10' x 10' x 10'
100	10/1/50	10' x 10' x 10'	1	100	10/1/50	10' x 10' x 10'

[illegible]

GENERAL NOTES

1. THE TERRAIN AND SOIL INFORMATION ON THIS DRAWING IS BASED ON


2. ADJACENT MILEPOST EQUALS MATCH LINE MILEPOST PLUS CHANGE/NO. VOL.

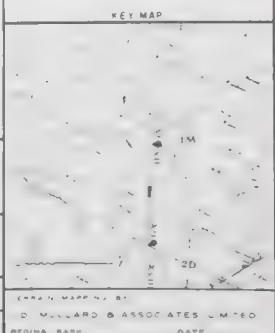
3 SEE DWG

FOR NOMENCLATURE USED FOR AD. DESCRIPTION ON ORAL HOLE LOGS

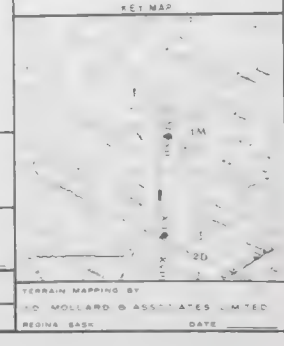
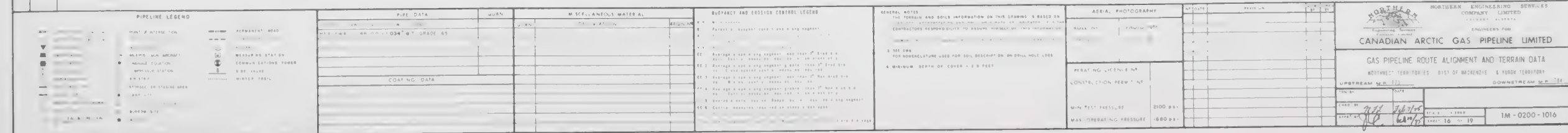
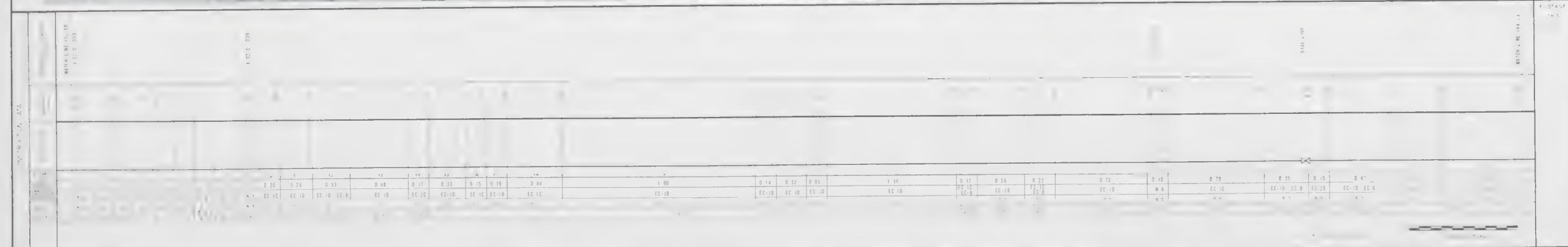
4. MINIMUM DEPTH OF COVER = 2.0 FEET

AERIAL PHOTOGRAPHY			NO	DATE	EXPOSURE	APPROX. LATITUDE	APPROX. LONGITUDE
W	177	180	+	+	+	+	+
OR 7407	177	180					
OPERATING LIFE LINE							
CONSTRUCTION FIRM NAME							
W. N. 1st. 1st. 1st.							
MAX. OPERATING PRESSURE (PSI)							

 <p>NORTHERN ENGINEERING SERVICES LIMITED</p>	NORTHERN ENGINEERING SERVICES COMPANY LIMITED	
	ADDRESS ONLY	
	CANADIAN ARCTIC GAS PIPELINE LTD.	
GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA A-1000001 LEAP TOWERS DIST OF WAGNAC I & FUEL TOWERS		
UPSTREAM M.P.	10	DOWNSTREAM M.P.
DATE: 10/10/75 BY: J.D. 14 10 IM-0200-1015		



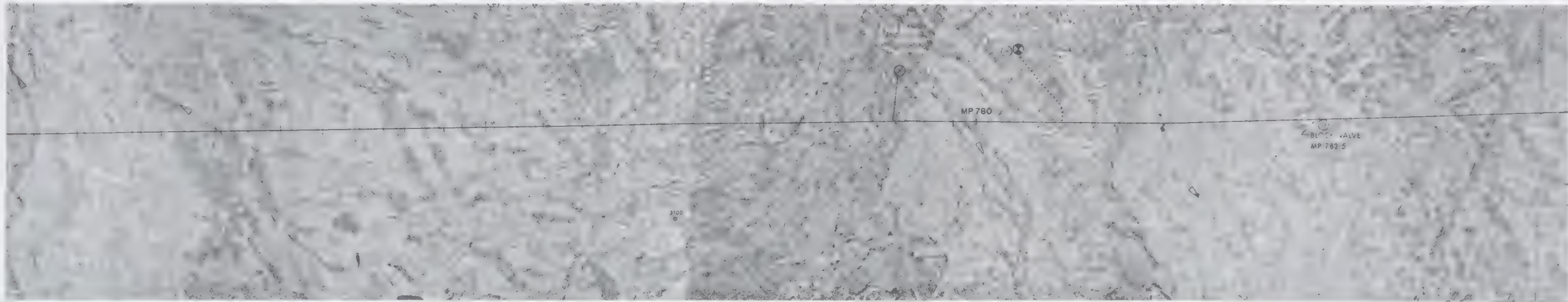
9.2
9.1
9.0
8.9



UNCLASSIFIED

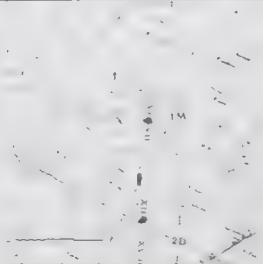
DRILL HOLE DATA

PROFILE



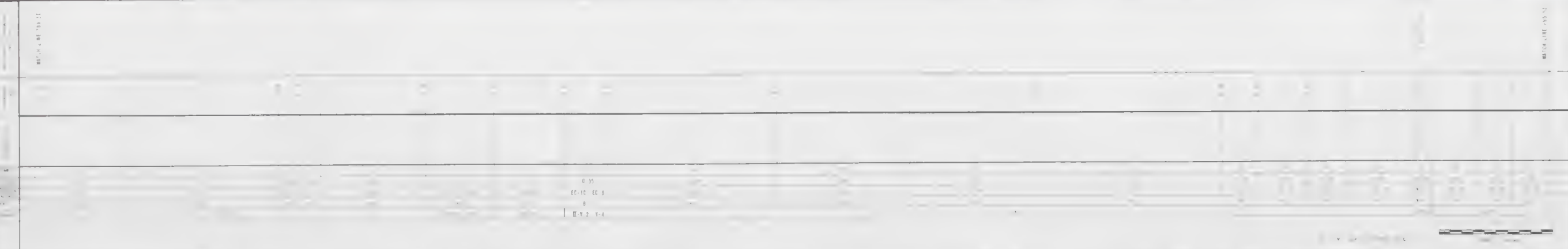
UNCLASSIFIED

KEY MAP



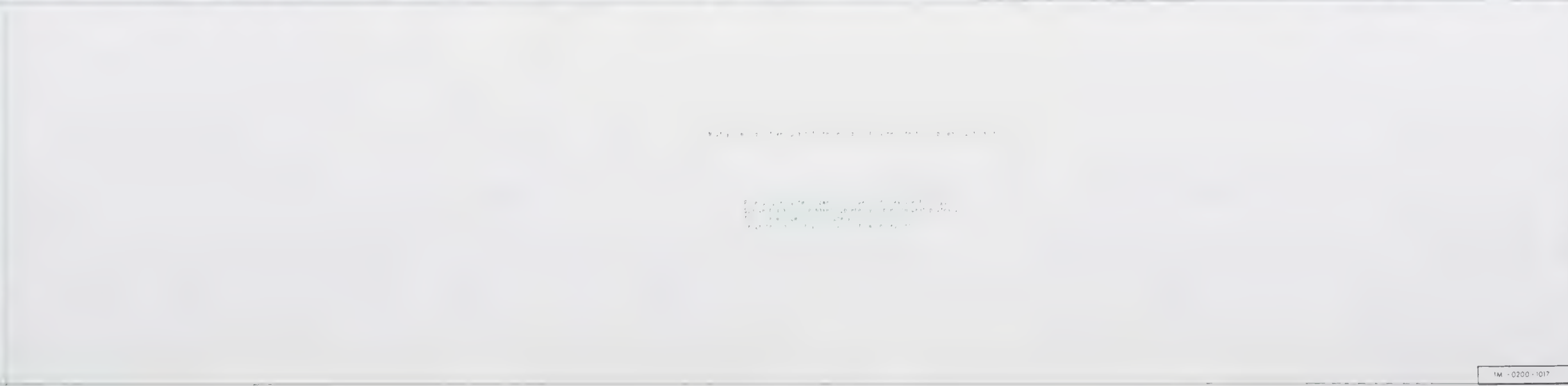
1M-0200-1016

TERMINAL MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REVISED 1988 DATE



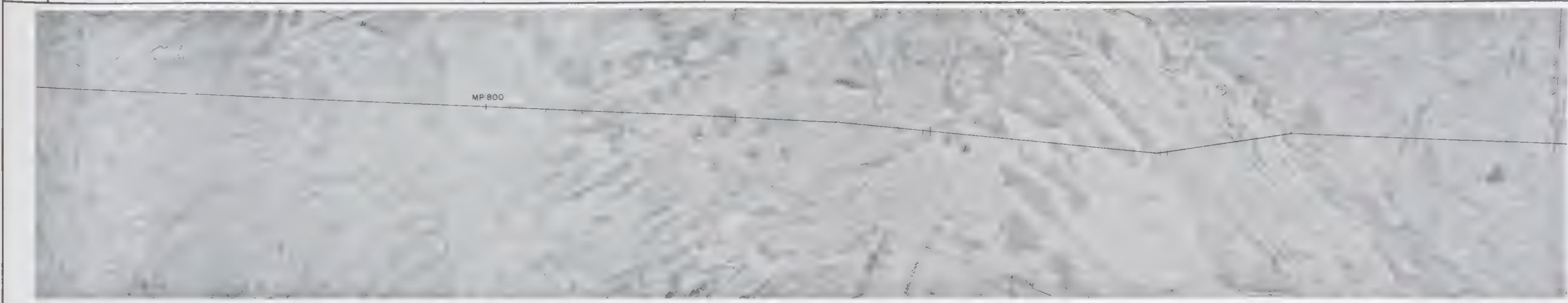
PIPELINE LEGEND		PIPE DATA		QUAN		MISCELLANEOUS MATERIAL		BUDGETARY AND EROSION CONTROL LEGEND		GENERAL DATA		TERRAIN MAPPING BY	

WATERSHED
PROFILE
DRILL HOLE DATA



1M - 0200 - 1017

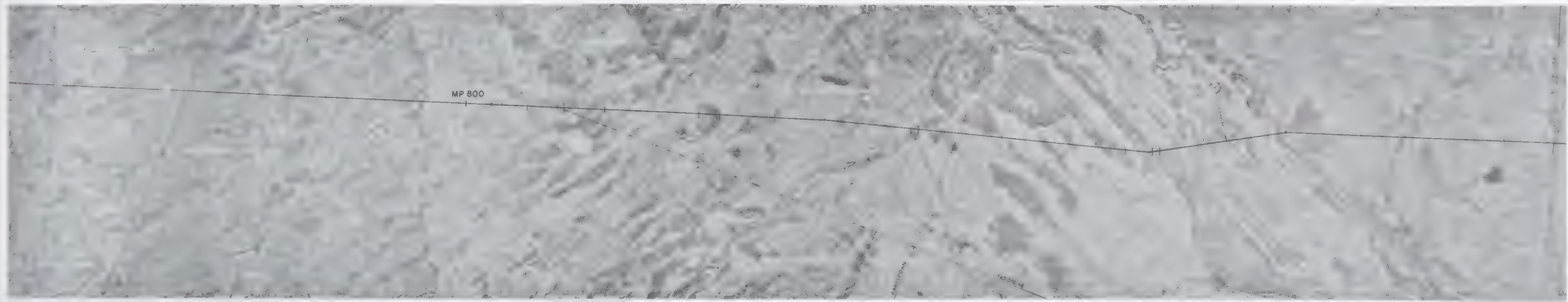
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA, SASK. DATE

[illegible][illegible]

OWNER'S COPY

DRILL HOLE DATA

PROFILE

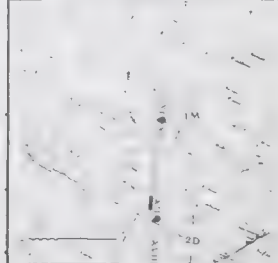


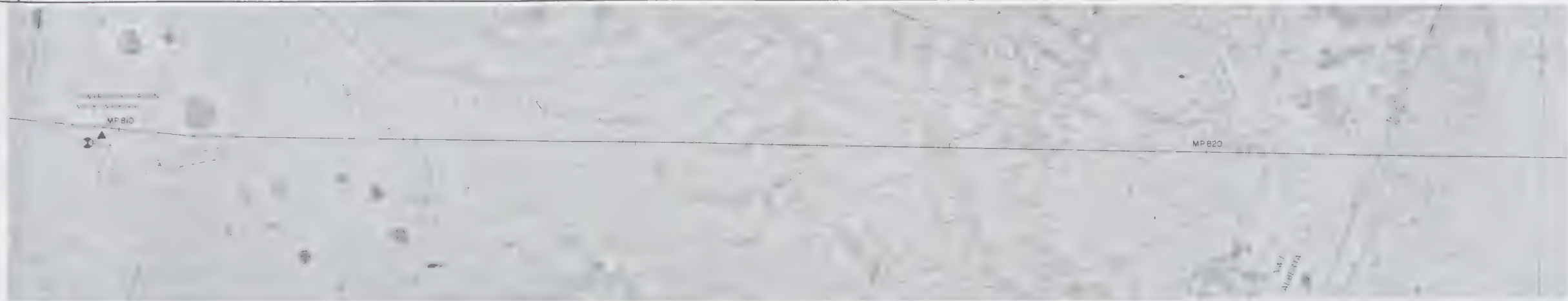
Notes: 1. profile is based on 1:1 scale, 100m x 100m grid.
2. profile is based on 1:1 scale, 100m x 100m grid.

Scale: 1:100,000

Profile is based on 1:1 scale, 100m x 100m grid.
Scale: 1:100,000

KEY MAP





Map data is derived from the following sources: 1. Aerial photography 2. Ground survey 3. Satellite data 4. Other sources as available

Map data is derived from the following sources: 1. Aerial photography 2. Ground survey 3. Satellite data 4. Other sources as available

KEY MAP



TERRAIN MAPPING &
J.D. MOLLARD & ASSOCIATES LIMITED
REVISION: 10/10/10

This figure is a technical drawing titled "GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA ALBERTA". It consists of several sheets, including a main alignment sheet, a key map, and various data tables.

The main alignment sheet shows a plan view of the gas pipeline route. The route is labeled "MP 830" and "BLOCK VALVE MP 833.4". A note indicates "AGE 2 WSM AGE 10 WSM". A scale bar at the bottom right shows distances from 0 to 100 meters.

The key map at the bottom right shows the location of the project area within Alberta, Canada, with coordinates 46°N, 115°W, and 116°W. It also includes a north arrow and a scale bar.

The data tables include:

- PIPELINE LEGEND**: Defines symbols for various pipeline features such as mainline, branch, and crossing.
- COATING DATA**: Provides information about the coating materials used for the pipeline.
- SUBSTRATE AND EROSION CONTROL LEGEND**: Defines symbols for substrate and erosion control measures.
- GENERAL NOTES**: Contains important information regarding the design and construction of the pipeline.
- TABLES**: Includes tables for stationing, elevation, and other relevant data.

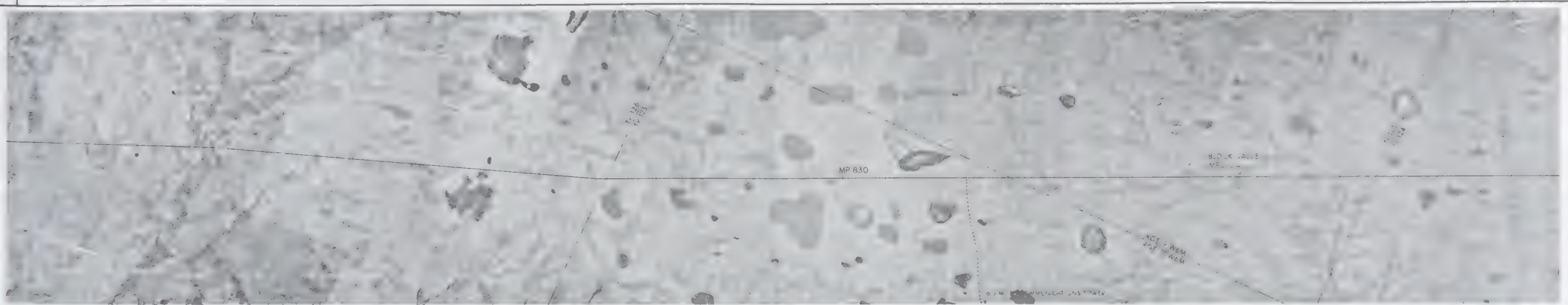
The drawing is dated 20-0200-1001 and was prepared by J.D. MOLLARD & ASSOCIATES LIMITED.

WATER

DRILL HOLE DATA

SECTION

SECTION

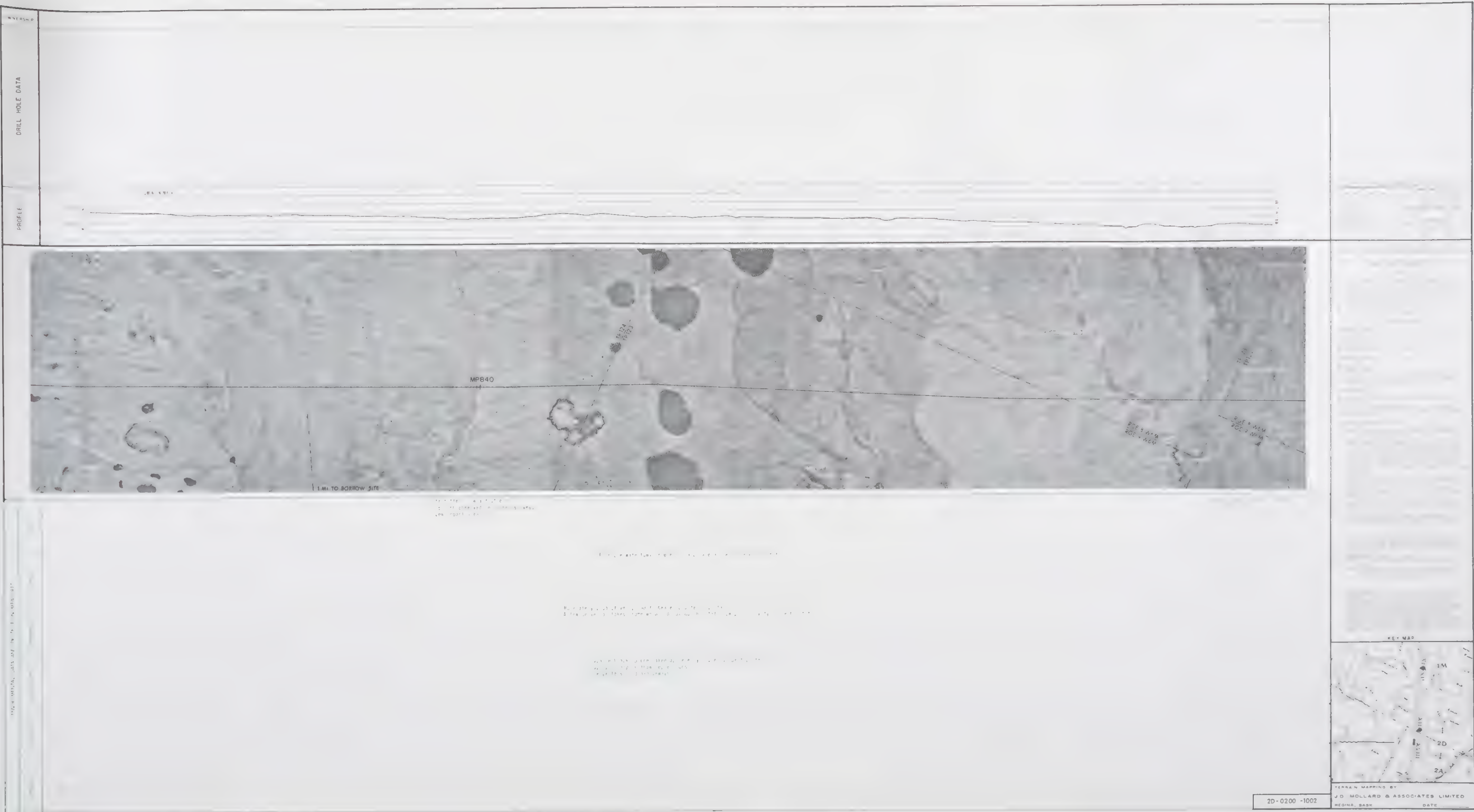


Drill hole data for MP 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Map of the area of the 1:50,000 scale map, showing the location of the drill holes and the 1:50,000 scale map.

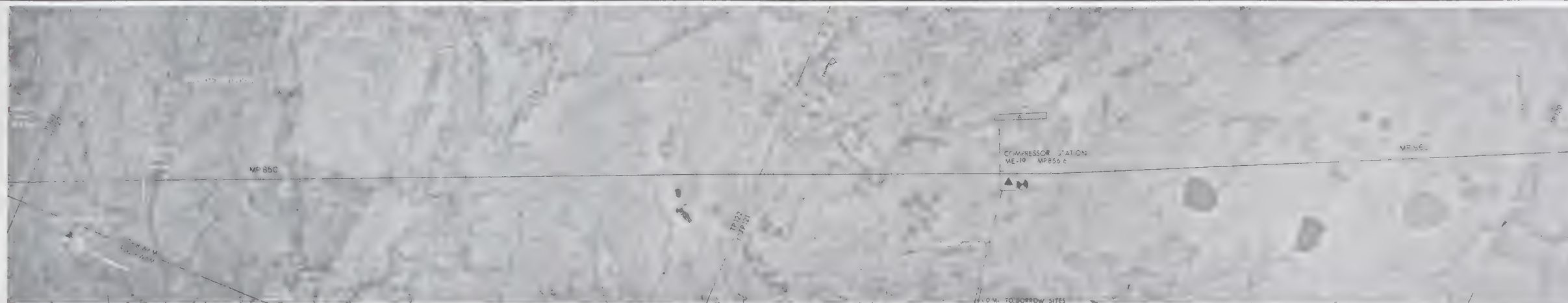
Drill hole data for MP 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.





DRILL HOLE DATA

2000



CONSTRUCTION TOWN DATA

[illegible]

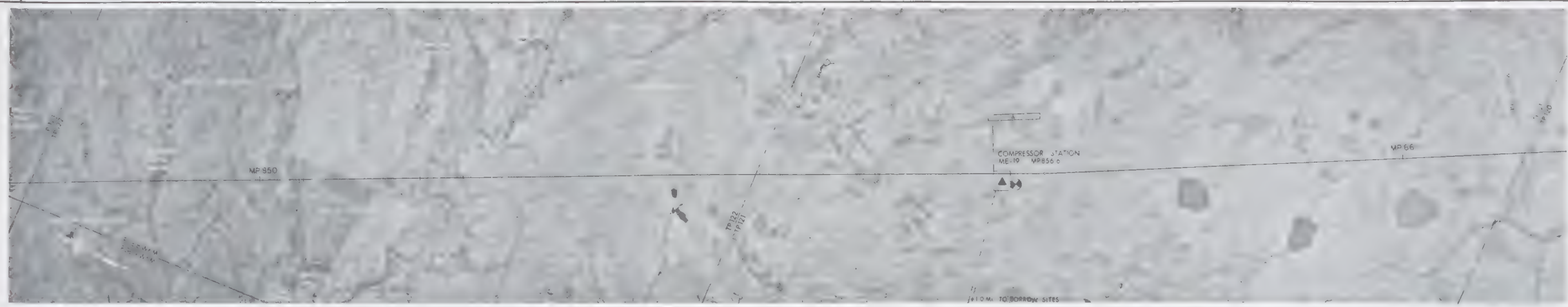
WATER

DRILL HOLE DATA

SPRINGS

WATER

WATER



NOT FOR USE IN THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP

P.S. D.F. with the 4.3.1.

NOT FOR USE IN THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP

NOT FOR USE IN THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP

NOT FOR USE IN THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP

NOT FOR USE IN THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP

NOT FOR USE IN THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP
FOR THE USE OF THE TERRAIN MAP

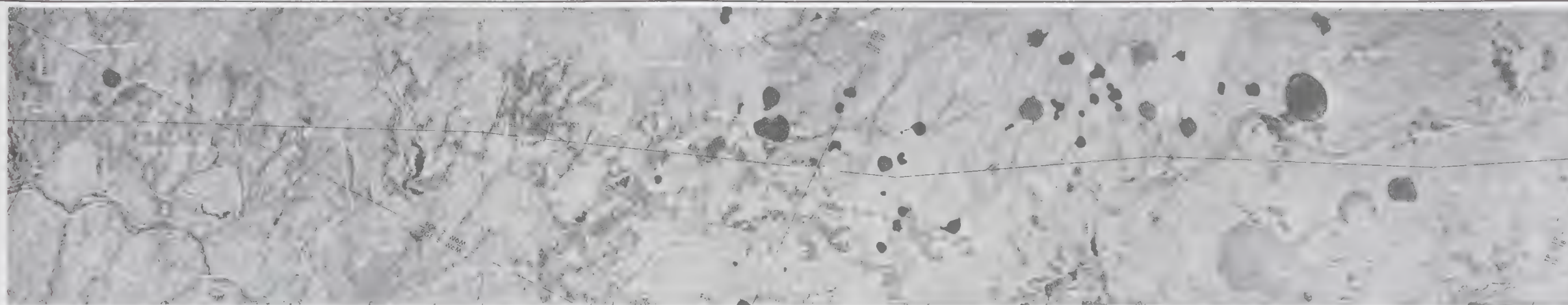
KEY MAP



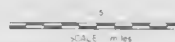
TERRAIN MAPPING BY
J.D. MOLLARD & ASSOCIATES LIMITED
REGINA SASK. DATE

ZD-0200-1003

PROFILE



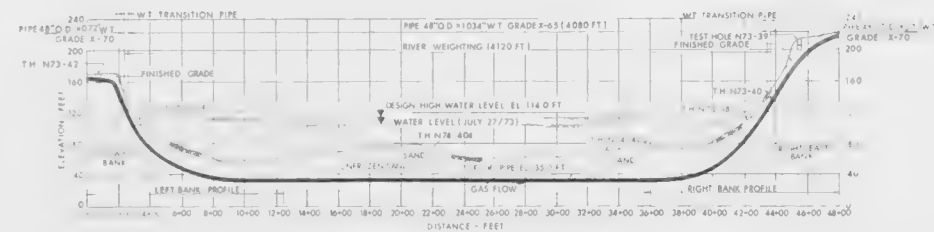
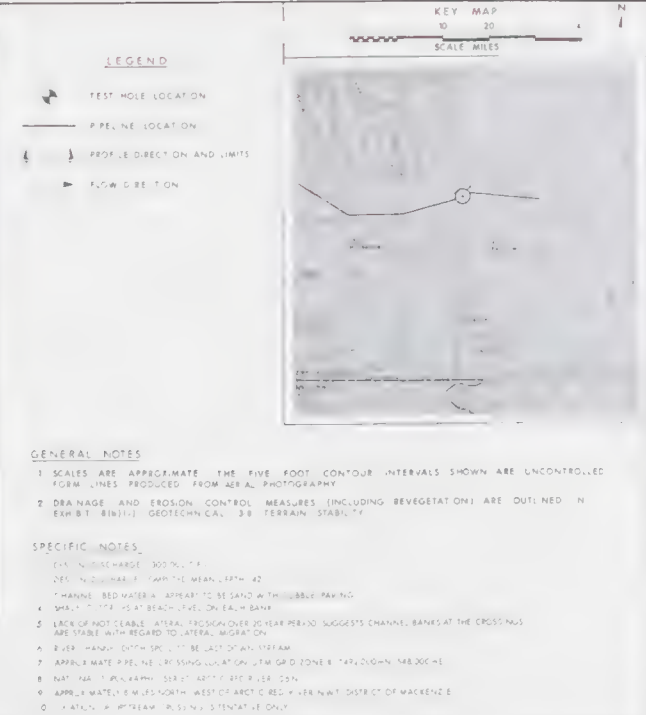
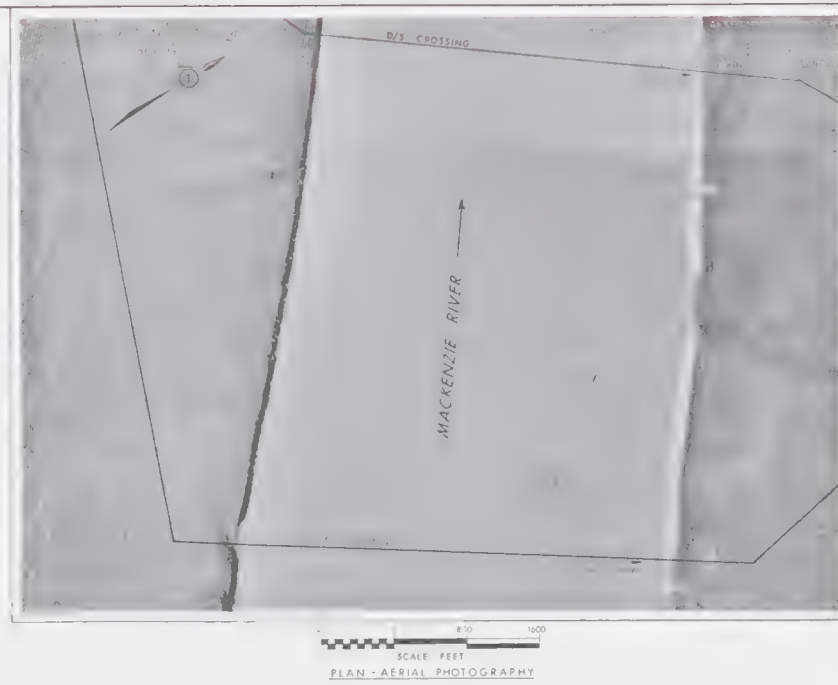
NOTE
 W P 884 80 on the East Fort Simpson
 Route corresponds to W P 853 40 on the
 Prime Route. Images shown from here
 to Esso petrol are a continuation of
 Prime Route images and should be
 replaced by 14 drives to reflect the
 East Fort Simpson re-alignment.



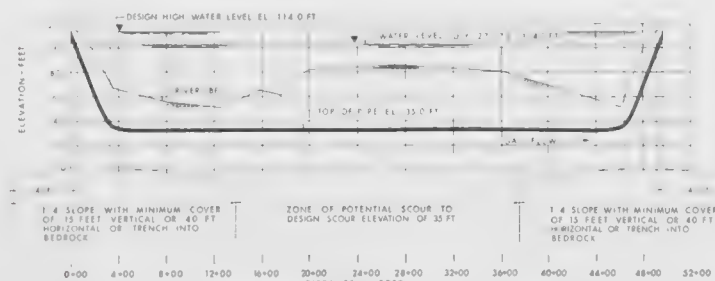
PIPELINE LEGEND 		PIE DATA CARRIER - 48" O.D. x 0.720" WT. GRADE 70 HEAVYWALL - 48" O.D. x 1034" WT. GRADE 65	QUAN 	SCENARIOS MATERIAL DESCRIPTION 	REMARKS 1. DISTANCE AND EROSION CONTROL LEGEND 2. DISTANCE AND EROSION CONTROL LEGEND 3. DISTANCE AND EROSION CONTROL LEGEND 4. DISTANCE AND EROSION CONTROL LEGEND 5. DISTANCE AND EROSION CONTROL LEGEND 6. DISTANCE AND EROSION CONTROL LEGEND 7. DISTANCE AND EROSION CONTROL LEGEND 8. DISTANCE AND EROSION CONTROL LEGEND 9. DISTANCE AND EROSION CONTROL LEGEND 10. DISTANCE AND EROSION CONTROL LEGEND 11. DISTANCE AND EROSION CONTROL LEGEND 12. DISTANCE AND EROSION CONTROL LEGEND 13. DISTANCE AND EROSION CONTROL LEGEND 14. DISTANCE AND EROSION CONTROL LEGEND 15. DISTANCE AND EROSION CONTROL LEGEND 16. DISTANCE AND EROSION CONTROL LEGEND 17. DISTANCE AND EROSION CONTROL LEGEND 18. DISTANCE AND EROSION CONTROL LEGEND 19. DISTANCE AND EROSION CONTROL LEGEND 20. DISTANCE AND EROSION CONTROL LEGEND 21. DISTANCE AND EROSION CONTROL LEGEND 22. DISTANCE AND EROSION CONTROL LEGEND 23. DISTANCE AND EROSION CONTROL LEGEND 24. DISTANCE AND EROSION CONTROL LEGEND 25. DISTANCE AND EROSION CONTROL LEGEND 26. DISTANCE AND EROSION CONTROL LEGEND 27. DISTANCE AND EROSION CONTROL LEGEND 28. DISTANCE AND EROSION CONTROL LEGEND 29. DISTANCE AND EROSION CONTROL LEGEND 30. DISTANCE AND EROSION CONTROL LEGEND 31. DISTANCE AND EROSION CONTROL LEGEND 32. DISTANCE AND EROSION CONTROL LEGEND 33. DISTANCE AND EROSION CONTROL LEGEND 34. DISTANCE AND EROSION CONTROL LEGEND 35. DISTANCE AND EROSION CONTROL LEGEND 36. DISTANCE AND EROSION CONTROL LEGEND 37. DISTANCE AND EROSION CONTROL LEGEND 38. DISTANCE AND EROSION CONTROL LEGEND 39. DISTANCE AND EROSION CONTROL LEGEND 40. DISTANCE AND EROSION CONTROL LEGEND 41. DISTANCE AND EROSION CONTROL LEGEND 42. DISTANCE AND EROSION CONTROL LEGEND 43. DISTANCE AND EROSION CONTROL LEGEND 44. DISTANCE AND EROSION CONTROL LEGEND 45. DISTANCE AND EROSION CONTROL LEGEND 46. DISTANCE AND EROSION CONTROL LEGEND 47. DISTANCE AND EROSION CONTROL LEGEND 48. DISTANCE AND EROSION CONTROL LEGEND 49. DISTANCE AND EROSION CONTROL LEGEND 50. DISTANCE AND EROSION CONTROL LEGEND 51. DISTANCE AND EROSION CONTROL LEGEND 52. DISTANCE AND EROSION CONTROL LEGEND 53. DISTANCE AND EROSION CONTROL LEGEND 54. DISTANCE AND EROSION CONTROL LEGEND 55. DISTANCE AND EROSION CONTROL LEGEND 56. DISTANCE AND EROSION CONTROL LEGEND 57. DISTANCE AND EROSION CONTROL LEGEND 58. DISTANCE AND EROSION CONTROL LEGEND 59. DISTANCE AND EROSION CONTROL LEGEND 60. DISTANCE AND EROSION CONTROL LEGEND 61. DISTANCE AND EROSION CONTROL LEGEND 62. DISTANCE AND EROSION CONTROL LEGEND 63. DISTANCE AND EROSION CONTROL LEGEND 64. DISTANCE AND EROSION CONTROL LEGEND 65. DISTANCE AND EROSION CONTROL LEGEND 66. DISTANCE AND EROSION CONTROL LEGEND 67. DISTANCE AND EROSION CONTROL LEGEND 68. DISTANCE AND EROSION CONTROL LEGEND 69. DISTANCE AND EROSION CONTROL LEGEND 70. DISTANCE AND EROSION CONTROL LEGEND 71. DISTANCE AND EROSION CONTROL LEGEND 72. DISTANCE AND EROSION CONTROL LEGEND 73. DISTANCE AND EROSION CONTROL LEGEND 74. DISTANCE AND EROSION CONTROL LEGEND 75. DISTANCE AND EROSION CONTROL LEGEND 76. DISTANCE AND EROSION CONTROL LEGEND 77. DISTANCE AND EROSION CONTROL LEGEND 78. DISTANCE AND EROSION CONTROL LEGEND 79. DISTANCE AND EROSION CONTROL LEGEND 80. DISTANCE AND EROSION CONTROL LEGEND 81. DISTANCE AND EROSION CONTROL LEGEND 82. DISTANCE AND EROSION CONTROL LEGEND 83. DISTANCE AND EROSION CONTROL LEGEND 84. DISTANCE AND EROSION CONTROL LEGEND 85. DISTANCE AND EROSION CONTROL LEGEND 86. DISTANCE AND EROSION CONTROL LEGEND 87. DISTANCE AND EROSION CONTROL LEGEND 88. DISTANCE AND EROSION CONTROL LEGEND 89. DISTANCE AND EROSION CONTROL LEGEND 90. DISTANCE AND EROSION CONTROL LEGEND 91. DISTANCE AND EROSION CONTROL LEGEND 92. DISTANCE AND EROSION CONTROL LEGEND 93. DISTANCE AND EROSION CONTROL LEGEND 94. DISTANCE AND EROSION CONTROL LEGEND 95. DISTANCE AND EROSION CONTROL LEGEND 96. DISTANCE AND EROSION CONTROL LEGEND 97. DISTANCE AND EROSION CONTROL LEGEND 98. DISTANCE AND EROSION CONTROL LEGEND 99. DISTANCE AND EROSION CONTROL LEGEND 100. DISTANCE AND EROSION CONTROL LEGEND	GENERAL NOTES THIS TERRAIN AND SOILS INFORMATION ON THIS DRAWING IS BASED ON SURFACE INFORMATION AND DRILL HOLE DATA. NO OTHER DATA IS CONSIDERED RESPONSIBLE TO ASSURE HONESTY OF THIS INFORMATION. FOR NOMENCLATURE USED FOR SOIL DESCRIPTION ON DRILL HOLE LOGS 4 MINIMUM DEPTH OF COVER = 2.5 FEET	AERIAL PHOTOGRAPHY ROLL NO. PHOTO NO. PROJECT NO. 100-1000 CONSULTANT FIRM NO.	DATE TIME SCALE 20-0200-1004	 NORTHERN ENGINEERING CONSULTANTS LIMITED ENGINEERS FOR CANADIAN ARCTIC GAS PIPELINE LIMITED GAS PIPELINE ROUTE ALIGNMENT AND TERRAIN DATA ALBERTA	TERRAIN MAPPING BY J.D. MOLLARD & ASSOCIATES LIMITED REGINA, SASK. DATE
----------------------------	--	--	-----------------	---	--	--	--	---------------------------------------	--	---



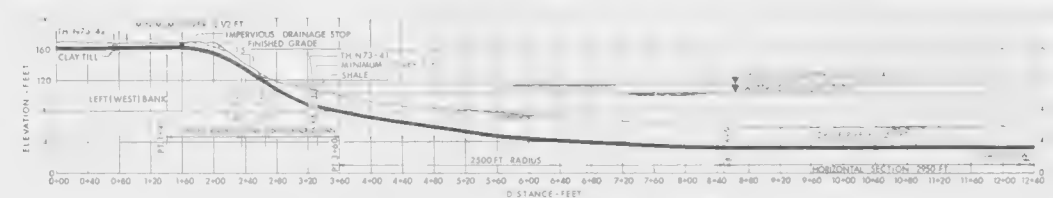
	NORTHERN ENGINEERING SERVICES COMPANY LIMITED SASKATCHEWAN ALBERTA ENGINEERS FOR		
	CANADIAN ARCTIC GAS PIPELINE LIMITED	AS SHOWN	
	PEEL RIVER CROSSING	DEC, 1974	
	PROFILE AND PLAN VIEWS		
		DRAWING NO. E-0232-1001	REV.



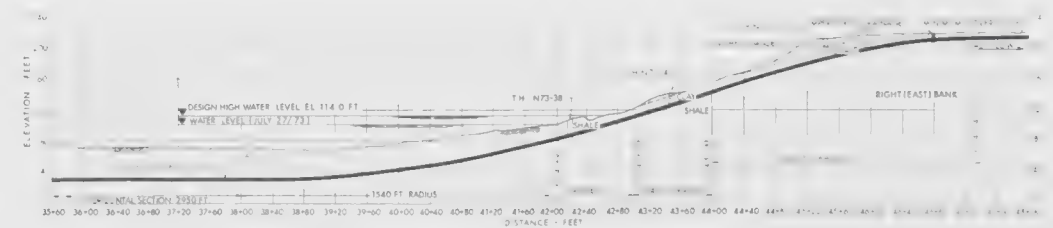
CENTRELINE PROFILE - DOWNSTREAM CROSSING



CENTRELINE PROFILE - UPSTREAM CROSSING



LEFT BANK PROFILE - DOWNSTREAM CROSSING




RIGHT BANK PROFILE - DOWNSTREAM CROSSING

NOTES

- 1 BACKFILL OF PIPE TRENCH ON VALLEY WALL
SLOPES TO BE SELECTED MATERIAL
- 2 DATUM ELEVATION 104 FT - WATER LEVEL
JULY 27, 1973
- 3 SLOPES INDICATED ARE APPROXIMATE NATURAL
SLOPES
- 4 DRAWINGS ARE BASED ON PRELIMINARY DESIGN
INFORMATION AND SUBJECT TO CHANGE
CHAINAGE 0+00 CORRESPONDS TO MP 457.54
- 6 PROFILE OF UPSTREAM CROSSING IS INTENDED
TO SHOW CHANNEL CROSS-SECTION AND
TENTATIVE BERTH DEPTH ONLY

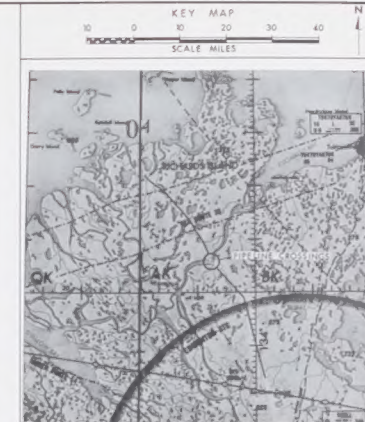
LEGEND

 FROZEN

	NORTHERN ENGINEERING SERVICES COMPANY LIMITED A LTD. A SEITE ENGINEERS FOR		
	CANADIAN ARCTIC GAS PIPELINE LIMITED		
	MACKENZIE RIVER CROSSING (POINT SEPARATION)		
	PROFILE AND PLAN VIEWS		



- LEGEND**
- TEST HOLE LOCATION
 - PIPELINE LOCATION
 - ↑ PROFILE DIRECTION AND LIMITS
 - FLOW DIRECTION
 - ⌞ BLOCK VALVES

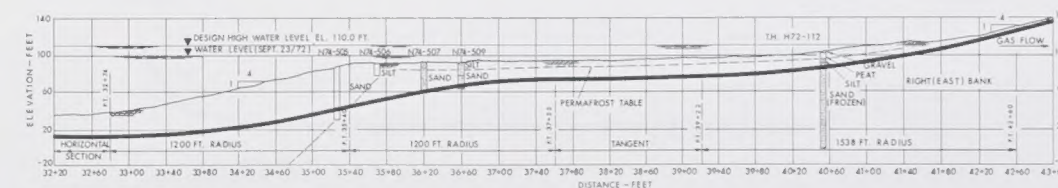
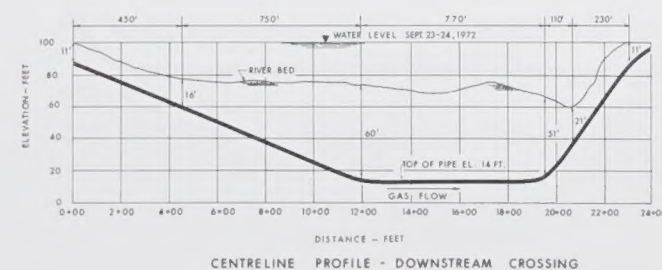
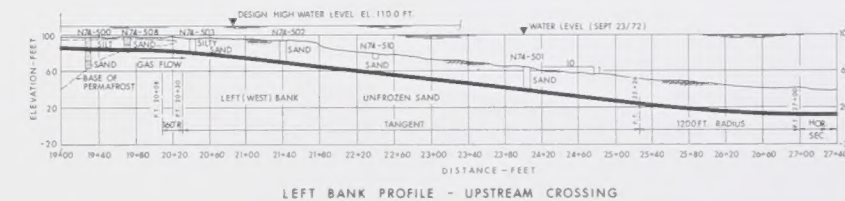
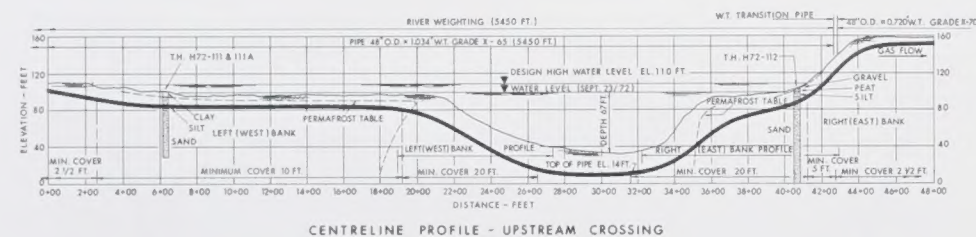


GENERAL NOTES

1. SCALES ARE APPROXIMATE. THE FIVE FOOT CONTOUR INTERVALS SHOWN ARE UNCONTROLLED FORM LINES PRODUCED FROM AERIAL PHOTOGRAPHY.
2. DRAINAGE AND EROSION CONTROL MEASURES (INCLUDING REVEGETATION) ARE OUTLINED IN EXHIBIT B(1)(1) GEOTECHNICAL 3.8 TERRAIN STABILITY.

SPECIFIC NOTES

1. ESTIMATED DESIGN FLOOD DISCHARGE 650,000 C.F.S.
2. PIPELINE LOCATED TO MINIMIZE ADDITIONAL SCOUR. MINIMIZE EXCAVATION, AND AVOID HIGH LEVEL BY PASS CHANNELS ON LEFT BANK.
3. BANK MATERIAL - PREDOMINANTLY FROZEN SAND.
4. APPROXIMATE PIPELINE CROSSING LOCATION U.T.M. GRID ZONE 8: 7,667,000 =N, 525,000 =E.
5. NATIONAL TOPOGRAPHIC SERIES, MACKENZIE DELTA 107 C.
6. APPROXIMATELY 62 MILES NORTH OF INUVIK N.W.T. DISTRICT OF MACKENZIE.
7. LOCATION OF DOWNSTREAM CROSSING IS TENTATIVE ONLY.



NOTES:

1. BACKFILL OF PIPE TRENCH ON VALLEY WALL SLOPES TO BE SELECTED MATERIAL.
2. DATUM ELEVATION 100 FT. - WATER LEVEL SEPT. 23, 1972.
3. SLOPES INDICATED ARE APPROXIMATE NATURAL SLOPES.
4. DRAWINGS ARE BASED ON PRELIMINARY DESIGN INFORMATION AND SUBJECT TO CHANGE.
5. CHAINAGE 0+00 CORRESPONDS TO M.P. 23.57.
6. PROFILE OF DOWNSTREAM CROSSING IS INTENDED TO SHOW CHANNEL CROSS-SECTION AND TENTATIVE BURIAL DEPTH ONLY.
7. DOWNSTREAM CROSS-SECTION DEVELOPED FROM PEMCAN SERVICES DRAWING NO. P1-501-102 ENTITLED "BATHYMETRIC MAP OF EAST CHANNEL - MACKENZIE RIVER" HENCE CHANNEL APPEARS NARROWER THAN IN PLAN VIEW.

LEGEND



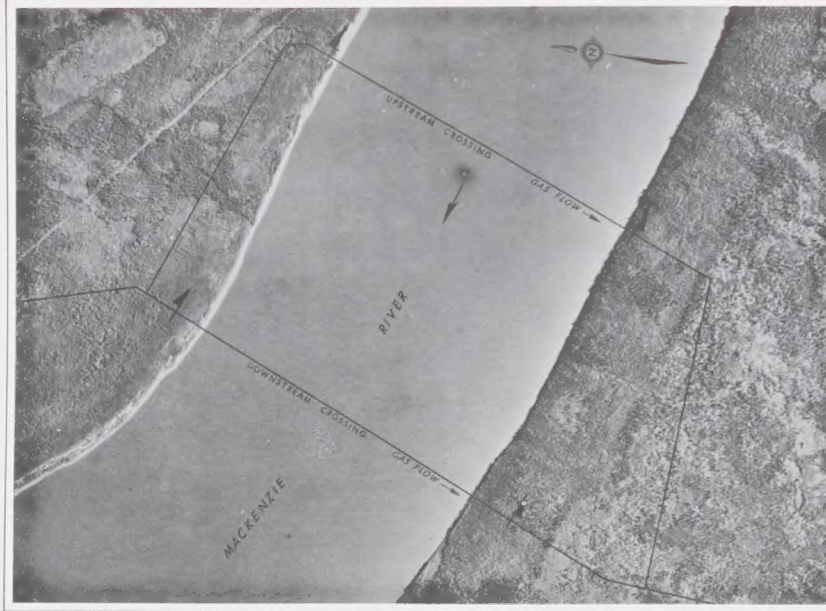
MACKENZIE RIVER CROSSING PROFILES

<p>NORTHERN ENGINEERING SERVICES COMPANY LIMITED CALGARY, ALBERTA ENGINEERS FOR</p>	SCALE	AS SHOWN
	DATE	DEC. 1974
	PROJECT NO.	1A-0232-1001
	DRAWING NO.	1A-0232-1001
<p>CANADIAN ARCTIC GAS PIPELINE LIMITED</p> <p>MACKENZIE RIVER CROSSING (SWIMMING POINT)</p> <p>PROFILE AND PLAN VIEWS</p>		REV.



MACKENZIE RIVER (DUAL) CROSSING - PLANS

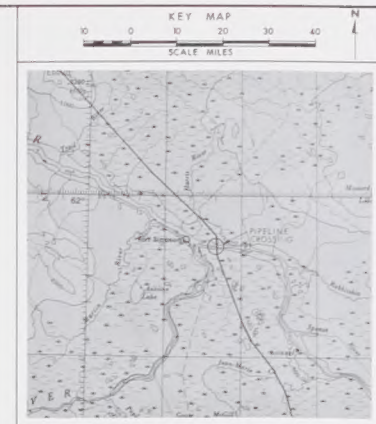
PLAN - FORM LINES



PLAN - AERIAL PHOTOGRAPHY

LEGEND

- TEST HOLE LOCATION (NONE TO DATE)
- PIPELINE LOCATION
- PROFILE DIRECTION AND LIMITS
- FLOW DIRECTION
- BLOCK VALVES



GENERAL NOTES

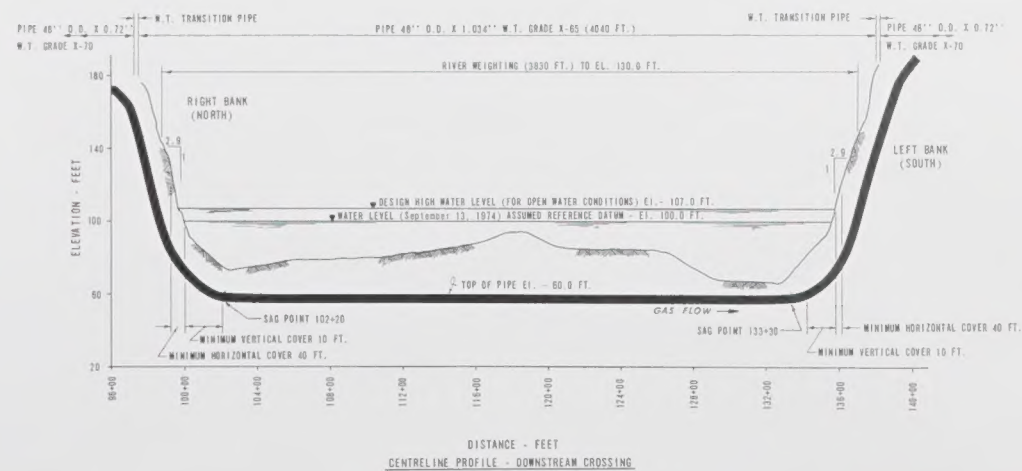
1. SCALES ARE APPROXIMATE. THE FIVE FOOT CONTOUR INTERVALS SHOWN ARE UNCONTROLLED FORM LINES PRODUCED FROM AERIAL PHOTOGRAPHY.
2. DRAINAGE AND EROSION CONTROL MEASURES (INCLUDING REVEGETATION) ARE OUTLINED IN EXHIBIT B(b)(1) GEOTECHNICAL 3/8 TERRAIN STABILITY.

SPECIFIC NOTES

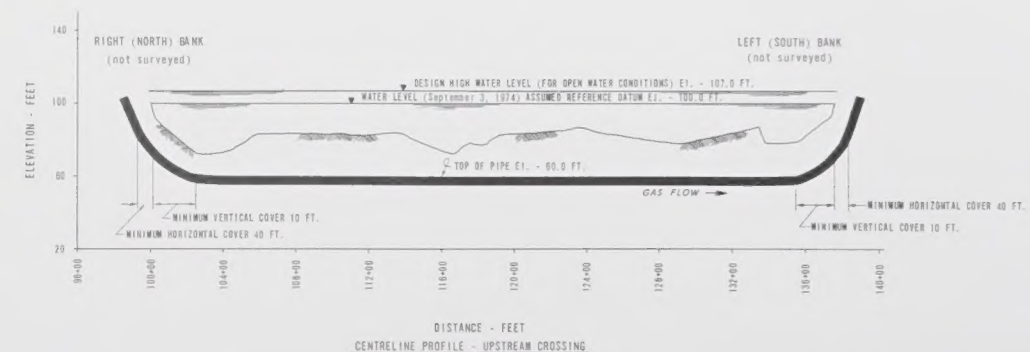
1. DESIGN DISCHARGE 100,000 C.F.S.
2. DESIGN DISCHARGE COMPUTED MEAN DEPTH 23 FT.
3. DESIGN HIGH WATER LEVEL CORRELATED WITH STAGE-DISCHARGE RELATIONSHIP FOR FORT PROVIDENCE.
4. CHANNEL BED APPEARS TO BE BOULDER PAVED.
5. LACK OF NOTICEABLE LATERAL EROSION OVER 20 YEAR PERIOD SUGGESTS CHANNEL BANKS AT THE CROSSING ARE STABLE WITH REGARD TO LATERAL MIGRATION.
6. APPROXIMATE PIPELINE CROSSING LOCATION U.T.M. GRID ZONE 10, 8,050,000 N.W., 500,000 E.
7. NATIONAL TOPOGRAPHIC SERIES FORT SIMPSON 95H.
8. APPROXIMATELY 6 MILES EAST OF FORT SIMPSON N.W.T. DISTRICT OF MACKENZIE.
9. SPACING BETWEEN CROSSINGS IS APPROXIMATELY ONE CHANNEL WIDTH AND TENTATIVE ONLY.

NOTES

1. DATUM ELEVATION 100 FT. - WATER LEVEL SEPTEMBER 13, 1974 AT RESPECTIVE CROSSINGS.
2. SLOPES INDICATED ARE APPROXIMATE NATURAL SLOPES.
3. DRAWINGS ARE BASED ON PRELIMINARY DESIGN INFORMATION AND SUBJECT TO CHANGE.
4. CHAINAGE 100+00 CORRESPONDS TO N.T. 502.84.
5. BANKS OF UPSTREAM CROSSING NOT SURVEYED BUT FROM AERIAL PHOTOGRAPHY AND FORM LINES APPEAR SIMILAR TO THOSE OF DOWNSTREAM CROSSING.
6. HEAVY WALL (1.024" W.T.) PIPE AND RIVER WEIGHTING TO BE USED AT UPSTREAM CROSSING TO APPROXIMATELY SAME EXTENT AS AT DOWNSTREAM CROSSING.
7. WEIGHTING EXTENDS UP TO EL. 130.0 FT. TO ACCOUNT FOR BACKWATER EFFECTS OF LIARD ON MACKENZIE R/S TO CROSSING.



MACKENZIE RIVER (DUAL) CROSSING
PROFILES



	NORTHERN ENGINEERING SERVICES	
	COMPANY LIMITED	
	CALGARY ALBERTA	
	ENGINEERS FOR	
CANADIAN ARCTIC GAS PIPELINE LIMITED		SCALE: AS SHOWN
MACKENZIE RIVER (DUAL) CROSSING		DATE: NOVEMBER, 1974
(FORT SIMPSON)		PROJECT NO: 1-B-33
PROFILE AND PLAN VIEWS		DRAWING NO: 1B-0232-1044

